UNIVERSITY OF PENNSYLVANIA

FACTORS OF INSTABILITY AFFECTING PRODUCTION AND EMPLOYMENT IN THE CIGAR MANUFACTURING INDUSTRY

RUSSELL H. MACK

A THESIS

IN ECONOMICS

PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

PHILADELPHIA

1933

THE CIGAR MANUFACTURING INDUSTRY

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CHAPTER I

INTRODUCTION

During the past decade and a half the cigar manufacturing industry of the United States has been the subject of an amazing transformation. In spite of the rapid introduction of machinery and utilization of mass-production methods, the volume of cigar production reached its zenith in 1920 and has since that time gradually declined.

Unlike many industries in which new and revolutionary technological changes have appeared, the cigar manufacturing industry has been confronted in recent years with a most discouraging decline in consumer demand. Nor have cigar manufacturers been able simply to resign themselves to this fact of declining demand. They have been quite aware of the steady upward trend of tobacco consumption as a whole in this country, and especially cognizant of the phenomenal expansion in the cigarette industry.

According to the *Census of Manufactures* for 1909 the value of the product of the cigar industry was 214.6 million dollars, or more than 51% of the total value for all branches of the tobacco industry. The value of the product of the cigarette industry was only 41.4 million dollars, or about 10% of the total for the tobacco industry. In the same year the cigar industry used in the process of manufacture almost five times as many pounds of leaf tobacco as were used by the cigarette industry.

By 1919 the cigarette industry had overtaken the cigar industry in so far as the relative position of the two branches of the industry can be determined by reference to the volume of tobacco used and to the value of the products. According to the *Census of Manufactures* of 1919 the value of the product of the cigar industry constituted about 35% of the total value of all the tobacco products, while the cigarette industry had increased its proportion of the total to over 37%. In the same year the cigarette industry consumed in manufacturing over 15 million more pounds of tobacco leaf than the cigar industry.

In 1927 the cigarette industry consumed in manufacturing

about 148 million more pounds of leaf than did the cigar industry, or only slightly less than twice as much. According to the *Census of Manufactures* for 1927 the value of the product of the cigarette industry constituted about 48% of the total for the entire tobacco industry while the value of cigar products constituted less than 28% of the total for all branches.

In other words, the facts of the situation reveal that the cigar industry, once a prosperous and growing branch of the tobacco industry, is undergoing rapid and far-reaching changes, the portent of which suggests a tendency either toward ultimate decadence or the relegation of the industry as a whole to a position of minor importance. It is the purpose of this study to examine some of the economic factors which have contributed to and intensified this situation of instability.

The writer conceives of "factors of instability," as the term is used in this study, as (1) those events which have combined and operated to affect adversely the relative production position of the cigar manufacturing industry as a branch of the tobacco industry, (2) maladjustments in production and employment occasioned by a suddenly and rapidly changing technology, and (3) seasonal and cyclical fluctuations in production and employment in the cigar industry.

It is hoped that it may be possible to maintain consistently throughout the analysis of these factors the point of view of an impartial observer, interested mainly in pointing out the character and significance of the major economic factors contributing to instability of production and employment in this peculiarly depressed industry. From such a point of view the various internal problems of production and distribution pertaining to individual manufacturing units may be considered as subordinate to the more vital problems confronting the cigar manufacturing industry as a whole. During the process of technological change and industrial readjustment a few individual concerns, it is true, have been able to secure advantages which have permitted them to attain a fair degree of financial stability. Yet, since the industry is still in the process of change, these evidences of stability may be more apparent than real. It would appear, therefore, that conduct of the analysis along the lines indicated by the broader point of view offers greater prospects of yielding facts or of revealing tendencies, the proper understanding of which might be necessary or at least

of some assistance in any formulation of future plans for the stabilization of the cigar manufacturing industry as a whole.

An understanding of the various factors of instability in the industry, however, does not in itself suggest the proper means for attaining stabilization. Stabilization is a relative concept. It involves a judgment of just what kind of stability has the greatest prospect for success. In the light of the total situation it is a matter of deciding upon what factors of instability the efforts of the industry should be concentrated. Some of the factors contributing to instability may be entirely beyond the influence and control of the industry. Under a competitive system, however, it may be assumed that a given industry would be interested in employing every available legitimate means which could be profitably utilized in maintaining its relative position with respect to other industries. It may be found that the industry has experienced losses which were due mainly to its own lack of initiative or its inability to comprehend the economic and social forces conspiring to produce those losses. In such a situation the industry may or may not have reason to believe that efforts might be profitably directed toward regaining some or all of the losses incurred. In this study, where analysis is made of factors of instability contributing to declining production and employment, there has been no intention to imply that stabilization consists in the attainment of any particular previous high level of production and employment. It may be found, again, that the declining trend is the result of forces for which the industry is in no important degree responsible. In this event, stabilization efforts would probably take the form of plans designed to mitigate the severity of the decline. If cyclical and seasonal factors appear to be of major concern, the industry must formulate plans of a still different character if the desired stabilization is to be accomplished.

Throughout this study the writer has been mainly interested in attempting to discover and analyze the chief factors contributing to instability in production and employment. On the other hand, without attempting to dictate a general program of stabilization for the industry, he has, nevertheless, given consideration to possible avenues of stabilization open to the industry in connection with each of the factors of instability analyzed.

A number of different circumstances have been cited by various observers in the effort to account for the unsatisfactory position of the cigar industry. Cigar manufacturers as a group have been

accused of an inability to appreciate the economies open to them through the introduction and utilization of machinery and mass production methods. On the other hand, some manufacturers and the labor union have contended that the rapid introduction of automatic cigar machinery has been destructive of the best interests of manufacturers, laborers, and consumers. Other observers have attributed the decline of the industry to circumstances growing out of the World War, which stimulated cigarette demand and forced raw material and labor costs and internal revenue tax rates to abnormal heights.

The major ills of the industry have also been attributed to prohibition. Under an editorial entitled "The Grape Juice Age," the *Tobacco World* in 1915 asserted:

> The tobacco industry and the liquor industry of the United States are most closely interwoven in their interests, and it is almost an impossibility to divorce them. While the corner saloon peddles out cheap cigars which keeps the little "Buckeyes" running, the fine cafés are the most valuable distributing centers for our finer grades of cigars, cigarettes, and tobacco. Take away the licenses of our Broadway restaurants and cafés for one year and note what a dire effect it will have on the cigar trade of New York City.[1]

But the cigarette industry managed to thrive in spite of prohibition, its period of most rapid expansion corresponding almost exactly to the period of national prohibition. Therefore proponents of such arguments as the above have been forced to assume that all the evil effects of the new legislation have fallen upon the cigar industry. In 1932 the editor of *Tobacco Leaf* declared: "Upon the date of Mr. Hoover's declaration of prohibition's failure, the regeneration of the cigar industry may be said to have begun."[2]

During and just after the War it was contended by many manufacturers, especially when they had occasion to urge taxation and tariff relief, that the stagnant condition of the cigar industry was due mainly to the fact that the public demanded and could not obtain a quality five-cent cigar. Now, however, since

[1] *Tobacco World,* April 1, 1915, p. 16.

[2] *Tobacco Leaf,* August 13, 1932, p. 4. This editorial viewpoint is in striking contrast to that expressed in the same journal in 1919, when it was held (January 23) that prohibition would be beneficial to the cigar business in that, if people were not spending so much for liquor, they would have more to spend for tobacco.

the consumption of the five-cent cigar has surpassed that of all other classes and is proclaimed to be of a quality equal to or better than the pre-war cigar, there are those who maintain that the movement has gone to the extreme. For example, the *Retail Tobacconist*, commenting upon the tremendous swing to the five-cent cigar says:

> The pendulum has swung too far and it is high time to start it swinging in the opposite direction. . . . We cannot of course dispute the fact that the economic situation has made millions of men switch from the high-priced cigars to the cheaper brands. We do contend, however, that retailers themselves are responsible to some extent for the utter stagnation in the demand for ten-cent, two for twenty-five cent, and three for fifty cent cigars.[3]

Suggesting methods whereby retailers might reverse the process by refusing to push only the sale of five-cent cigars, the editor concludes: "It is senseless to make nickel cigar smokers of men whose income will permit them to buy better quality brands."

Again, labor union difficulties have often been assigned by manufacturers as causes for the plight of the industry. Other causes cited are the exorbitant internal revenue taxes, high protective tariffs on imported supplies of wrapper leaf tobacco, and the failure of farmers to improve the quality of domestic filler tobacco. And finally, destructive and unethical advertising, especially in the last few years, has come in for its share of the blame.

Some of these proffered explanations must be given important consideration in analyzing the situation now confronting the cigar industry; some are plainly only guesses and opinions. Again, some of the circumstances cited as major ills of the cigar manufacturing industry are by no means wholly peculiar to that particular branch of the tobacco industry. The editor of *Tobacco Leaf* a few years ago, in support of his contention that what was most needed in the tobacco industry was "a moderator—a Judge Gary," analyzed the situation in the tobacco industry as follows:

> The tobacco industry has, among its component parts, many concerns that are run with machine-like precision. They are organized to the highest degree, thoroughly systematized, splendidly equipped, and one hundred per cent efficient. This industry embraces many establishments to which it can point with pride and than which no other industry can boast of any better.
>
> But, notwithstanding these examples of individual development and achievement, the tobacco industry as an industry is probably

[3] Quoted in the *Western Tobacco Journal*, August 9, 1932, p. 21.

about the most chaotic of all branches of business in the United States. It is utterly lacking in any semblance of co-operation and cohesion. Still, speaking of the industry as a whole, there is no pretense at a fixed policy of procedure, no mutual sympathy or understanding, and there is no such word as ethics in the entire lexicon of the tobacco business.

The industry, as an industry, goes blundering along the pathway of industrial progress, carried by its own momentum, prosperous after a fashion by the grace of favoring circumstances and progressing in the right direction purely through good luck and in spite of the chaos which has characterized it for many years and through which probably no other industry in the world could possibly have survived.[4]

There is no reason to question the accuracy of these observations on the tobacco industry, but it must be further asserted that a combination of circumstances peculiar to the cigar industry has evolved in such a manner as to cause the criticisms to apply with greater severity to the cigar industry than to any other branch of the tobacco industry.

[4] *Tobacco Leaf.* Editorial, July 6, 1929, p. 4.

CHAPTER II

THE TREND OF PRODUCTION AND CONSUMPTION OF TOBACCO PRODUCTS

I. The Consumption of Leaf Tobacco

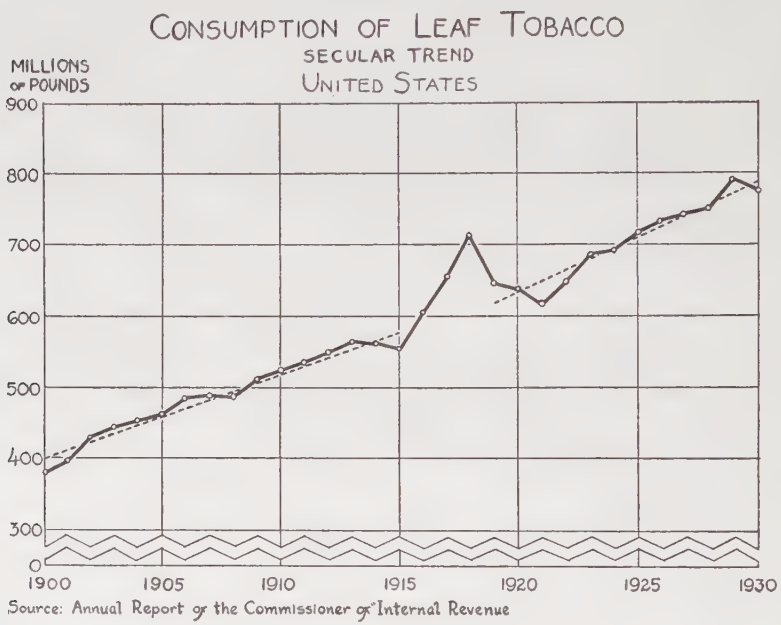
The assertion was made in the preceding chapter that important and far-reaching changes have occurred in the tobacco manufacturing industry. An analysis of these changes must now be undertaken with a view to determining the chief factors contributing to instability in the cigar manufacturing branch of the industry. In this chapter certain long-run trends of production and consumption of tobacco products will be analyzed, and an attempt made to account for the declining post-war trend of production and consumption of cigars.

One measure of consumption of tobacco products in this country is the amount of leaf tobacco used annually in manufacturing. For the sake of efficiency in the levying and collection of taxes, the Bureau of Internal Revenue requires that each tobacco establishment and all tobacco dealers be registered. All manufacturers, moreover, are required to keep strict accounts, and to make sworn reports on leaf tobacco and other materials used in the manufacture of cigars, cigarettes, snuff, and tobacco. The reports of the Bureau of Internal Revenue are, therefore, used as the source of information concerning the quantities of leaf tobacco consumed in this country. The number of pounds of leaf used in the various branches of manufacture have been compiled in Table 1 for the period of 1900 to 1930. The total of all leaf used in 1900 was slightly over 379 million pounds, but the total in the peak year, 1929, was about 797 million pounds, an increase of over 50%. Graphic presentation of these figures of consumption of leaf brings out clearly the almost unbroken upward trend, the only considerable decline occurring in the post-war years, 1919 to 1921. In Chart I trends have been fitted to the consumption data for the pre-war and post-war periods. A straight-line trend fitted to the natural numbers for the period 1900 to 1915 reveals an

increase in consumption of 11.7 million pounds of tobacco annually, while the annual increase for the period 1919 to 1930 is 15.8 million pounds.[1]

It must be noted that the output of registered factories may be either consumed in the United States or exported to foreign countries, but, as a matter of fact, the products are almost entirely consumed within this country.[2] A relatively small amount of leaf is also consumed in bonded manufacturing warehouses, an amount

Chart I



Source: Annual Report of the Commissioner of Internal Revenue

averaging 25½ million pounds annually for the period 1916 to 1928.[3] These figures are not included in the data in Table 1. Bonded manufacturing warehouses are under the jurisdiction of the Bureau of Customs, and were instituted to operate solely for exportation, exception being made of cigars manufactured entirely of tobacco imported from any one country, as, for example, Cuba.

[1] Trend: Straight line, 1900-15. Origin, July 1, 1907. $y = 486.4 + 11.74x$
Trend: Straight line, 1919-30. Origin, July 1, 1924. $y = 705.0 + 15.8x$

[2] *Foreign Commerce and Navigation,* Annual Reports of the United States Department of Commerce, Washington, D. C.

[3] *Stocks of Leaf Tobacco,* Bulletin 165, United States Department of Commerce, Washington, 1928.

TABLE 1

LEAF TOBACCO USED IN MANUFACTURING IN THE UNITED STATES[1]

Calendar Years, 1900–1930
(Unit: Thousands of Pounds)[2]

Date	Cigars		Cigarettes		Tobacco and Snuff	Total
	Large	Small	Large	Small		
1900	102,561	2,833	33.72	13,050	260,683	379,162
1901	112,889	3,498	41.23	11,083	270,571	398,039
1902	114,955	2,434	81.86	11,734	298,348	427,553
1903	127,582	2,473	54.80	12,485	300,758	443,353
1904	124,623	3,046	53.49	13,297	307,491	448,511
1905	127,101	3,449	60.45	13,371	314,524	458,507
1906	136,335	3,943	99.55	16,011	325,370	481,760
1907	142,554	4,971	131.24	18,498	320,729	486,884
1908	126,057	4,382	156.49	20,509	331,907	483,013
1909	132,259	4,410	156.59	23,558	344,325	504,709
1910	136,462	4,654	172.99	31,099	350,480	522,869
1911	144,680	5,236	151.90	38,446	346,544	535,059
1912	145,781	3,909	150.91	46,966	350,549	547,357
1913	158,755	4,230	138.53	56,420	338,870	558,415
1914	153,954	4,803	92.40	62,116	333,883	554,850
1915	141,854	4,594	92.37	66,699	338,448	551,687
1916	154,949	4,118	104.49	93,233	349,198	601,604
1917	165,360	4,215	131.16	133,374	354,984	658,066
1918	158,345	3,931	211.32	177,167	369,080	708,736
1919	148,777	2,726	151.21	166,632	330,096	648,383
1920	166,361	2,235	138.55	146,768	324,477	639,981
1921	140,658	2,568	135.53	158,200	310,686	612,251
1922	149,363	2,345	142.04	169,455	325,509	646,815
1923	157,837	1,915	156.44	200,238	328,888	689,035
1924	151,356	2,056	137.93	217,562	322,745	693,858
1925	147,530	1,470	144.96	244,170	325,109	718,425
1926	151,049	1,322	108.50	267,475	317,399	737,354
1927	151,049	1,460	95.96	290,368	301,314	744,288
1928	149,993	1,296	87.63	310,070	293,176	754,624
1929	150,878	1,250	92.79	346,450	297,953	796,625
1930	136,749	1,151	65.33	347,849	293,990	779,806

Source: *Annual Reports of the Commissioner of Internal Revenue.*

[1] Consumption in bonded manufacturing warehouses not included.

[2] The most recent conversion figures have been used. See Report for fiscal year ended June 30, 1931, p. 127. Beginning with 1922, stemmed leaf and scraps, etc., were converted to unstemmed equivalent at a ratio of 3 lbs. stemmed, etc., to 4 lbs. unstemmed.

Because of the difficulty of converting exported and imported manufactured tobacco products into equivalent amounts of unstemmed leaf, figures on the actual amounts of leaf remaining for consumption can only be approximate. Figures of this kind have, however, been computed by the Bureau of Foreign and Domestic Commerce for the post-war years.[4] When the amounts of leaf consumed in bonded warehouses are combined with the amounts in the form of imported products, the annual totals are only slightly less than the amounts of exported leaf, so that the totals for leaf used in domestic manufacture are practically the same as the totals "remaining for consumption." Using the method described above, the Bureau of Foreign and Domestic Commerce has estimated the per capita consumption of leaf in the United States at 5.69 pounds in 1920, 5.97 pounds in 1925, and 6.09 pounds in 1930.

II. The Trend of Production of Tobacco Products

While the consumption of tobacco has been rapidly increasing, some divisions of the tobacco industry have failed to share in the general increase. Instability introduced in this manner has fallen with particular severity on the cigar branch of the industry since the War. Prior to the War the consumption of both cigars and cigarettes was increasing, and it was not until 1918 that the amount of leaf used in manufacturing cigarettes exceeded that used in making cigars.

The trend of large-cigar production for the period from 1900 to 1920 is indicated in Chart II. For the purpose of internal revenue collection, cigars are divided into two general classes, large cigars or those weighing more than three pounds per thousand, and small cigars or those weighing not more than three pounds per thousand. On the average about sixteen times more large cigars than small cigars have been produced annually in the last ten years. Furthermore, since the War the trend of small-cigar production has been steadily downward, the production of 1929 representing a 41% decrease over the production of 1919. Hence, the production data for large cigars, which have been compiled in Table 2, have been utilized to indicate the changing production situation in this branch of the tobacco industry.

[4] *Statistical Abstract of the United States,* Department of Commerce, Washington.

TABLE 2

PRODUCTION OF CIGARS AND CIGARETTES
UNITED STATES 1900–1930

(Unit: Millions)

Calendar Years	Cigars		Cigarettes	
	Weighing more than 3 lbs. per 1,000	Weighing not more than 3 lbs. per 1,000	Weighing more than 3 lbs. per 1,000	Weighing not more than 3 lbs. per 1,000
1900	5,566	611	4.59	3,254
1901	6,139	775	5.18	2,723
1902	6,232	676	10.13	2,961
1903	6,806	592	6.39	3,360
1904	6,640	736	7.10	3,427
1905	6,748	804	6.91	3,667
1906	7,148	990	10.74	4,501
1907	7,302	1,074	14.98	2,256
1908	6,489	1,073	17.67	5,743
1909	6,668	1,043	17.79	6,819
1910	6,810	1,118	19.37	8,644
1911	7,049	1,214	17.06	10,469
1912	7,044	1,055	16.60	13,167
1913	7,572	959	15.11	15,566
1914	7,174	1,075	13.89	16,856
1915	6,599	965	15.82	17,964
1916	7,042	890	22.19	25,290
1917	7,560	967	24.60	35,331
1918	7,054	847	23.41	46,657
1919	7,072	713	31.89	53,120
1920	8,097	633	28.04	47,430
1921	6,726	670	14.52	52,085
1922	6,722	633	17.45	55,763
1923	6,950	505	18.07	66,716
1924	6,598	531	16.05	72,709
1925	6,463	447	17.43	82,247
1926	6,499	412	13.24	92,097
1927	6,519	439	11.43	99,809
1928	6,373	416	10.40	108,706
1929	6,519	420	9.95	122,392
1930	5,894	383	7.37	123,802

Source: *Annual Reports of the Commissioner of Internal Revenue.*

Cigar production, according to the reports of the Commissioner of Internal Revenue, increased from 5,566 million in 1900 to a peak of 8,097 million in 1920. A straight-line trend fitted by the method of least squares to the annual production figures for this period (Chart II) yields an annual trend increment of 64.4 million cigars. From the peak year 1920, however, cigar production dropped precipitously to a low mark of 6,722 million in 1922, a decline of over 1,375 million cigars. Although there was some improvement in 1923, the trend of production since the War has been downward at an average annual rate of 53.6 million cigars.[5]

While the year 1921 marked the beginning of the decline in cigar production, it also witnessed the resumption of the upward movement in cigarette production, a movement which was already under way just prior to the War but which was remarkably accelerated during the War and only checked in the single year 1920. The annual small-cigarette production figures for the period 1913-1929 have been plotted on a logarithmic scale in Chart III.[6] The straight-line trend fitted to this data shows an average annual rate of increase in production of 13.4%.[7]

Leaf tobacco used in the manufacture of smoking and chewing tobacco and snuff has always constituted a very large proportion of the total leaf used for all tobacco products. But even though the amount of leaf used in these products has averaged more than twice as much as that used in all cigars, they have not been considered as important competitors of cigars. The production of smoking tobacco, the most important product of this group from the standpoint of volume, reached a peak of 258 million pounds in 1918, but declined to 219 million pounds in 1920, the year in which cigar production reached its peak. During the next five years, the production of smoking tobacco regained some of its losses, the output increasing to 248 million

[5] Trend: Straight line, 1900-1920. Origin July 1, 1910. $y = 6{,}895.76 + 64.45x$.

Trend: Straight line, 1922-1929. Origin Jan. 1, 1926. $y = 6{,}823. - 53.6x$.

[6] The production of large cigarettes, those weighing more than three pounds per thousand, has never constituted more than a very small fraction of the total production. Production has fallen from a peak of 31.8 million cigarettes in 1919 to 7.3 million in 1930.

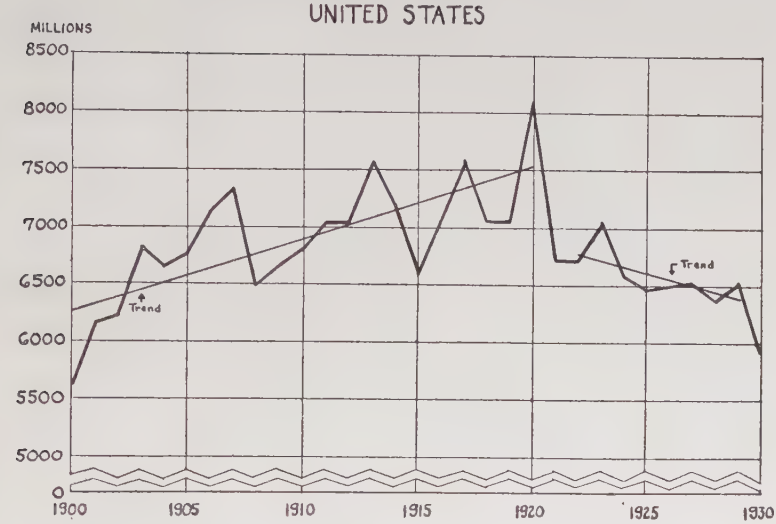
[7] Trend: Straight line, 1913-1929. Origin July 1, 1921. $\log y = 1.69737 + .05474x$.

Chart II

PRODUCTION OF LARGE CIGARS

SECULAR TREND

UNITED STATES



Source: Annual Report of the Commissioner of Internal Revenue

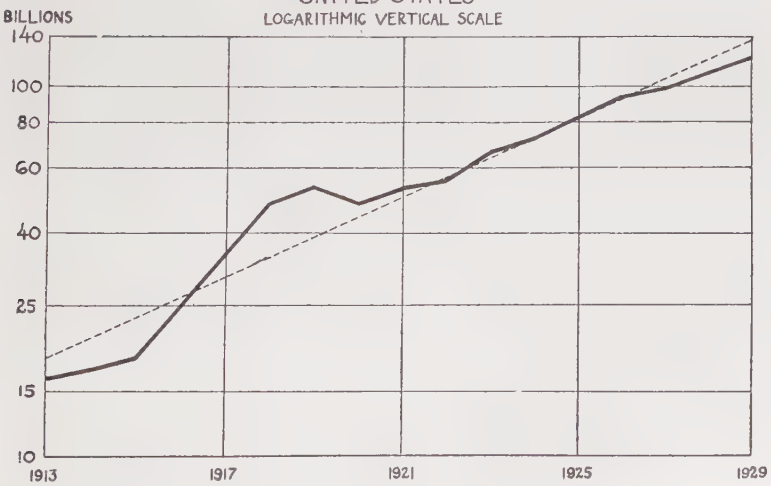
Chart III

PRODUCTION OF SMALL CIGARETTES

SECULAR TREND

UNITED STATES

LOGARITHMIC VERTICAL SCALE



Source: Annual Report of the Commissioner of Internal Revenue

pounds in 1925, but since that time the annual production has been gradually downward.

III. The Trend of Large-Cigar Production by Classes

It has already been noted that cigars are now classified for revenue purposes into two general classes, large cigars or those weighing more than three pounds per thousand, and small cigars, or those weighing not more than three pounds per thousand. Beginning with the Revenue Act of October 3, 1917 large cigars were divided into five classes according to the intended retail price. These classes are as follows: Class A, or those cigars intended to retail at not more than 5 cents each; Class B, or those intended to retail at more than 5 cents but not more than 8 cents; Class C, or those intended to retail at more than 8 cents but not more than 15 cents; Class D, or those intended to retail at more than 15 cents but not more than 20 cents; and Class E, or those intended to retail at more than 20 cents. No sub-classification has been made for small cigars.

The five-cent cigar had even prior to the World War achieved a position of importance in the cigar industry. Accurate figures of production of this class are not available, but it is generally conceded that at least 50% of the total average pre-war production was of the five-cent class, and it has been recently estimated by the Tobacco Merchants' Association that about 65% of the total consumption in the United States before the War was of this class.[8] During the War, however, the prices of labor and material rose so high that it soon became practically impossible to produce a pre-war quality cigar for five cents. Some of these cigars, it is true, were produced but they were in general made of cheap scrap and other inferior tobacco.

This situation was not serious during the War when high-priced cigars had a ready sale, but in 1921, when Class C cigars suffered a precipitous 24% drop in production and Class B about the same percentage reduction, attention was again turned to the five-cent cigar. Costs, however, still remained relatively high, which, together with the wartime revenue taxation rates, presented a difficult situation.

[8] *Hearings on the Tariff,* House Committee on Ways and Means, 70th Congress, 2nd Session, Volume VI, Schedule 6, 1929. Washington, D. C.

It was about this time that the importance of the automatic machine began to be appreciated, especially by the larger concerns. It was perceived that while machine manufacture demands larger scale operations, these mass-production methods in turn result in economies of operation which permit the production of better quality cigars. Improvement in the quality of output and improved methods of advertising and merchandising stimulate demand and thus permit further large-scale operations and additional economies. The machines will produce any of the various-priced cigars, but because of the prevailing demand situation their employment has come to be of greatest importance in the manufacture of the Class A cigar.

A glance at the chart on page 17 will indicate the changing relationship of the various classes of cigars. Since no comparable figures of either production or numbers of cigars withdrawn tax-paid were published in the annual reports of the Bureau of Internal Revenue prior to 1924, the figures reproduced in Table 3 and used to indicate the trend of production by classes are those computed from the monthly sales of revenue stamps. For the years since 1924, at least, the yearly totals computed in this way correspond very closely to the revenue totals of large cigars actually manufactured.

Class A cigar production for the first time exceeded Class B production in 1921. In 1922 Class A production increased 28% over the preceding year, while both Class B and C production decreased. In that year Class A production constituted 38% of the total production, and Class B and C, 23% and 37% respectively. From 1922 to 1926 the curve of production of Class C cigars showed a tendency to level out, the average annual output for the five-year period amounting to about 2,561 million cigars. Likewise very little change occurred in Class A production from 1922 to 1925, the total output falling below Class C production in 1923, the year of maximum production for the period 1921 to date. In 1924 Class A cigar production again began to gain relative to the total production, most of the gains in 1924 and 1925 having been made at the expense of Class B, but between 1926 and 1927 Class C production also began to decline, and the trend has been steadily downward since that time. In 1926 Class A production constituted 44% of the total of all classes; Class C, 39%; and Class B, 14% of the total. Between 1926 and 1929 Class A production increased 24% while Class B production

declined about 30% and Class C production a little over 13%. Class A production fell off slightly in the depression year 1930

TABLE 3

PRODUCTION OF LARGE CIGARS BY CLASSES
UNITED STATES, 1918–1930

(In Millions)

Year	A	B	C	D	E	D + E	Total
1918.....	1,296.7	4,202.8	1,738.7	16.7	21.6	38.3	7,276.5
1919.....	1,875.2	2,689.6	2,172.1	39.0	38.7	77.7	6,814.6
1920.....	1,792.8	2,480.8	3,481.4	131.1	55.7	186.8	7,941.8
1921.....	2,043.4	1,883.1	2,652.9	147.8	31.5	179.3	6,758.7
1922.....	2,622.1	1,594.2	2,524.3	115.6	35.7	151.3	6,891.9
1923.....	2,550.1	1,614.6	2,673.6	124.1	36.3	160.4	6,998.7
1924.....	2,610.2	1,363.4	2,521.3	131.7	32.8	164.5	6,659.4
1925.....	2,673.6	1,124.8	2,515.1	146.6	40.5	187.1	6,500.6
1926.....	2,886.0	945.4	2,575.6	150.7	30.9	181.6	6,588.6
1927.....	3,176.3	747.5	2,465.3	150.3	33.1	183.4	6,572.5
1928.....	3,310.3	639.7	2,330.8	143.2	29.6	172.8	6,453.6
1929.....	3,582.6	575.0	2,221.8	145.1	27.1	172.2	6,551.6
1930.....	3,573.7	388.8	1,784.4	121.0	21.2	142.2	5,889.1

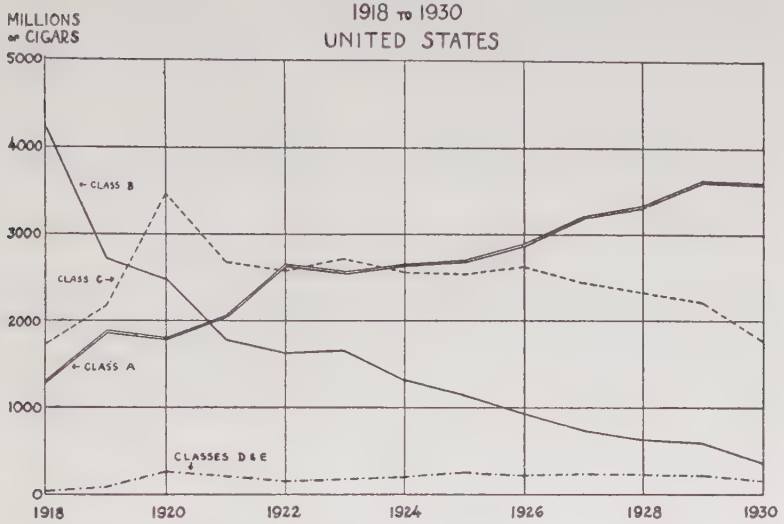
PERCENTAGE OF CLASSES TO ANNUAL TOTAL

Year	A	B	C	D + E	Total
1918.....	18	58	24	0	100
1919.....	28	39	32	1	100
1920.....	23	31	44	2	100
1921.....	30	28	39	3	100
1922.....	38	23	37	2	100
1923.....	37	23	38	2	100
1924.....	39	20	38	3	100
1925.....	41	17	39	3	100
1926.....	44	14	39	3	100
1927.....	48	11	38	3	100
1928.....	51	10	36	3	100
1929.....	54	9	34	3	100
1930.....	61	7	30	2	100

Source: Bureau of Internal Revenue. Monthly releases to the trade showing total sales of cigar stamps.

Chart IV

ANNUAL PRODUCTION OF CIGARS BY CLASSES
1918 TO 1930
UNITED STATES



Source: Bureau of Internal Revenue; *Monthly releases to the trade indicating total sales of cigar stamps.*

but both Class C and B output dropped so much more in proportion that Class A cigars constituted 61% of the total large cigars as compared with 7% for Class B and 30% for Class C.

CHAPTER III

FACTORS OF INSTABILITY ON THE SIDE OF DEMAND

I. Changing Habits of Tobacco Consumption

One of the most important factors contributing to instability in the cigar manufacturing industry is that of a changing demand for the various types of tobacco products. As to just what extent the industry itself is responsible for this situation, it is difficult to assert with confidence. Consumer habits often undergo radical changes irrespective of conditions existent in the industry supplying the demand. The dictates of custom and social usage may, for example, exert a greater influence upon demand than the price or quality of the product. These intangible demand factors are illusive and difficult, if not impossible, to analyze satisfactorily.

It has already been pointed out that the consumption of tobacco products as a whole in this country is not decreasing. While less tobacco is being consumed in the form of cigars, more and more is being demanded in the form of cigarettes. It is a question whether this change in consumer demand is indicative of a situation wherein many consumers, previously mainly cigar consumers, have gradually shifted wholly or partially to cigarettes, or whether cigar smokers as a class are merely consuming cigars in progressively smaller quantities. It would seem that both have been important factors contributing to the changing consumption situation.

It is certainly an observed fact today that smokers are demanding lighter, shorter, and milder "smokes." Although the genesis of this movement toward lighter smoking and the reasons for it cannot be precisely determined, its existence became evident to some observers as early as 1915. In that year, for example, Straiton and Storm, manufacturers of "Robt. Burns" cigars, advertised as follows:

Obey the smoke-signals! Moderate—either the strength or the quality! Get into line with the better living trend of the time! As manufacturers we are interested in the permanence of our business. Intelligent smoking helps our sales. Because when you smoke wrong you are limiting your capacity to smoke in the future.

Today mildness is one of the chief points of emphasis in practically all cigar advertising. A "heavy" cigar is simply not in demand. This explains the almost universal demand for cigars with light-colored wrappers. Dark wrappers have come to be associated with heavy or strong cigars and light-colored wrappers with mild cigars. Such is, of course, not the fact, but the belief persists and cigar manufacturers have done little to educate the public along this line. It seems, therefore, that regardless of the increasing popularity of the cigarette during the last fifteen years some change in habits of cigar consumption would have occurred.

On the other hand many smokers, who formerly were chiefly cigar consumers, have doubtless become to some degree at least consumers of cigarettes. Prior to the World War, the cigarette was by no means a socially elect tobacco product. A sort of social barrier, in other words, was erected against it in favor of the more aristocratic cigar. But this barrier was suddenly and entirely broken down during and after the War. The consumption of cigarettes was vastly stimulated during the War years. The "fag" became almost a military necessity. The less convenient, more expensive cigar found small favor in camp or on the front. But cigarettes became the doughboys' solace, were acclaimed, whether rightly or wrongly, as good for the nerves, and were generously furnished by governmental and private agencies to troops at home and abroad. The production of cigarettes, which had averaged about 10 billion annually for the five-year period just prior to the War, increased rapidly to an annual total of over 35 billion in 1919.

Moreover, the pre-war cigarette consumer favored a product manufactured from relatively high-priced Turkish and other imported tobaccos. During the War, however, it became difficult to import tobacco in sufficient quantities and the manufacturers were forced to produce a blended cigarette. The use of the relatively cheaper American grades of tobacco, coupled with use of improved machine methods of manufacture, tended to decrease

costs. Heavy advertising in turn aided in maintaining and assuring the dominant position thus attained by the blended cigarette.

Another change growing out of the War consumption situation was the tendency to mitigate the seriousness of the growing feeling of moral disapprobation which had been finding expression in legal restrictions against the cigarette. Attempts have been made since the War to revive the anti-cigarette movement, but the impetus lent by the War together with the ever alert, nation-wide advertising efforts of the cigarette manufacturers have successfully counteracted these movements.

Having broken down the prejudice of men against the cigarette, the manufacturers then set out to cultivate the habit of cigarette consumption among women. Trade surveys, according to the Standard Statistics Company,[1] have revealed that approximately 80% of the adult male population of this country indulge in smoking, but that probably only 10% of the female population have adopted the habit. In many large sections of the country the proportion of women smokers is almost nil, but there is a very apparent tendency for women to smoke more in office positions, especially in the small offices.

Women cigarette smokers have not, of course, been recruited from the ranks of cigar smokers. Increasing numbers of women cigarette consumers, therefore, have affected the trend of cigar production only in so far as this has tended to add to the general popularity of cigarette consumption and in so far as increased consumption of cigarettes has improved the competitive position of the cigarette industry.

In conclusion it may be pointed out that the cigarette industry has been favored by the previously mentioned tendency for tobacco users to demand lighter and milder "smokes." A cigarette *is* a short, mild "smoke" and as such appeals to the modern smoker and especially to the beginner. Yet it is doubtful if the physical effects of the consumption of large numbers of these "short smokes" each day are very different from the effects of the moderate use of cigars. There is a tendency now in cigarette advertising to emphasize to the smoker that even milder cigarettes are the urgent demand of "this high-pressure age." One of the recent advertisements reads:

> We live in a fast-moving age. We work harder, play harder, travel quicker. And we smoke quite a lot more cigarettes. But

[1] *Trade and Securities Service*, Vol. II, May 23, 1930, p.T-26.

there is this about it. They have got to be milder today. In this high-pressure age, smokers don't like strong cigarettes. That's plain.

The cigar industry could not of course forestall the wider forces operating to change the demand situation, but, as will be shown later in this analysis, cigar manufacturers were slow to recognize the serious inroads being made by the cigarette, were disinclined to join forces to regain lost ground, and awaited too long the expected rehabilitating influence of the machine.

II. Advertising and Merchandising Methods

THE ADVANTAGE OF THE CIGARETTE INDUSTRY IN ADVERTISING

Since the chief competitor of the cigar in post-war years has been the cigarette, and since the cigar has failed to retain the favor of smokers, production having declined even in periods of so-called business prosperity, it has seemed necessary to devote some attention to an analysis of the means by which tobacco-consumer attitudes and habits may have been molded or modified.

By reason of the early attainment of volume production and concentration into a limited number of establishments, the cigarette industry has had an advantage over the cigar industry in advertising. Increasingly large annual advertising appropriations have been made by the four great cigarette manufacturing concerns. These four companies produce about 95% of the total annual cigarette production of the United States, and their mammoth advertising campaigns have undoubtedly been an important influence contributing to the decline in cigar consumption in this country.

Both the cigar and cigarette branches of the tobacco industry have employed advertising designed mainly to stimulate selective rather than primary demand, yet, whether by design or not, the national advertising methods of the cigarette companies have made some implicit appeal to primary demand and have thus tended to widen the market for cigarettes.[2] This is not equivalent to an

[2] Professor Copeland differentiates between a primary buying motive, or one which "imparts to consumers the major, initial impulse to purchase the kind of article offered for sale," and a selective motive, or one which aims "to divert the consumer's expenditure away from other brands of the same article and from other articles serving different purposes." Melvin T. Copeland, *Principles of Merchandising* (A. W. Shaw Co., New York, 1926), Chapter VI.

assertion that magazine advertising is a better medium for stimulating demand than newspaper advertising. The two media are basically non-competitive; "no one medium is best for all purposes."[3] This proposition has been further elaborated as follows:

> In other words, competition is between different types of marketing approach rather than between different media, and when the marketing approach is decided upon, the decision as to the major medium to be used for advertising follows logically. This must not be taken to mean that the two types of medium are mutually exclusive. It is almost a truism to say that the national magazine campaign can gain in effectiveness if it is accompanied by a reinforcing campaign in newspapers. Still further, the retailer who carries nationally advertised merchandise cannot be expected to use magazines. If his customers expect retail advertising, they expect it for the most part in newspaper. Local newspaper advertising by retailers is, therefore, highly desirable.[4]

Due to the fact that almost from the beginning cigarettes have been made by a small number of concerns under mass-production methods and nationally distributed, the medium of magazine advertising on a national scale has been possible and the greater pictorial possibilities of magazine as compared with newspaper advertising has permitted the appeal to primary demand. On the other hand, the cigar industry, divided as it has been into a large number of small competing manufacturing units, has found it very difficult to attain national distribution, and the local distribution of cigars has therefore dictated the choice of the newspaper as the chief advertising medium.

While no authoritative data on the total volume of advertising for the various products of the tobacco industry have been compiled, there are enough available to show roughly the relative lineage or amounts expended on cigars and cigarettes. According to a count of newspaper lineage made by Media Records, Inc.[5] for the year 1929, companies making nine nationally advertised brands of cigarettes used 37,261,390 lines of advertising as compared with only 15,077,181 lines used by companies making 44 nationally advertised brands of cigars. For the same year, an

[3] Copeland, *op. cit.*, p. 284.

[4] Lawrence C. Lockley, *Vertical Coöperative Advertising* (McGraw-Hill, New York, 1931), p. 125; also pp. 119-126 *passim.*

[5] Compiled from 369 daily and Sunday newspapers in 79 largest cities of the United States for *Sales Management*, "Markets and Media Reference Number," for September 27, 1930.

estimate compiled by the Bureau of Advertising of the American Newspapers' Publishing Association shows that the four great cigarette concerns expended four times as much in national newspaper advertising as the chief cigar companies.[6]

The Media Records count of newspaper lineage for 1928 revealed that two-thirds of the 41 million lines devoted to tobacco advertising went to cigarettes and that of this share all but 10% was used by the four popular brands. The 66 brands of cigars covered by the survey absorbed a little less than one-third of the advertising space. The four chief cigars advertised were the "El Producto," "La Palina," "White Owl," and "Dutch Masters," in the order named. These four advertised cigar brands used only 5 million lines as compared with 24 million lines used by the four leading cigarette brands. Only 50,000 lines of rotogravure space were utilized by the three cigars advertised in newspapers in this manner as compared with 841,000 lines used by the four leading cigarette brands.

As was pointed out above, the popular medium for cigar advertising has been the newspaper. Only a relatively few companies, some six or eight, have employed magazines, and the appropriations have been small in most cases. The Crowell Publishing Company, in its *National Markets and National Advertising,* has recorded the cigar advertising appropriations for advertisers in thirty of the most important magazines. The total appropriations grew from $62,000 in 1916 to a peak of $286,000 in 1921, and during the following eight years averaged only about $134,000 annually, even though the number of advertisers during that time increased. The Curtis Publishing Company figures[7] show only slightly different results, although the compilation is made from a much larger number of ranking magazines.

Adequate data to permit a comparison of cigars and cigarettes in magazines and other types of advertising are not available. Both products have been extensively advertised through the media of billboards, posters, and the radio, but probably about the same relative proportion of expenditures has been made for these types as was made for newspaper advertising.

[6] The confidential nature of these reports does not permit the use of the actual figures for these expenditures. The survey covers only companies spending annually $50,000 or over.

[7] In *Leading Advertisers,* Curtis Publishing Company, Philadelphia, Pennsylvania.

No attempt will be made in this research to compare and evaluate the relative merits of cigarette and cigar advertising copy. It may be said, however, that cigar manufacturers have on the whole confined their copy to statements concerning the rather obvious qualities of color, aroma, freshness, taste, mildness, size, and shape. Pictorially, advertising of these qualities is limited to the latter two.

Innovations in copy have appeared from time to time but in few cases have they been consistently followed or long retained. For example, there was a movement on the part of a few companies around 1925 and 1926 to push the panatella and small perfecto, the appeal being directed towards consumers interested in a shorter, milder, and cheaper smoke of the same quality as the larger styles of cigars. Again, a little later the style factor began to be emphasized but was soon abandoned. One important large producer has, for the past several years, been conducting a campaign through a dozen or more tobacco trade publications designed to cultivate dealer goodwill by helpful and timely suggestions on cigar retailing. Another experiment of doubtful value was tried by one large company in 1929 in a campaign advertising cigars for "masculine men," the intimation being also that cigarettes were harmful. The central theme of the copy was: "Let the ladies and boys smoke whatever they want, but avoid nervous habits yourself."

It appears, then, that the advertising of cigarettes has tended to create a more serious advertising problem for the cigar industry. The industry has not been in a position to meet the huge costs of the competition and this, together with the fact that such cigar advertising as has been done leaves much to be desired, has contributed in an important degree to the instability of demand.

Recognizing the increasing seriousness of the cigarette competition and the disadvantageous position of the cigar industry with respect to advertising, leaders in the industry have on several occasions considered the possibilities of planning a nation-wide and intensive advertising campaign designed to feature cigar smoking in general. It was contended that, since coöperative advertising had been found profitable in certain other industries, there was reason to believe it would be of some assistance at least in checking the rapid decline of cigar consumption.

In this, as in many other situations, however, the cigar industry has exhibited an utter lack of ability to successfully effect the

necessary coöperative organization. In 1924 a special effort was made to revive the spirit of fight in the industry. At the 26th Annual Convention of the National Cigar Leaf Association it was planned not only to begin a campaign for raising a million and a half dollars for national coöperative advertising, but also to fight the cigarette industry with the slogan, "Be a man and smoke a cigar," and to emphasize in all individual advertising that strength and mildness of cigars be judged by the consumer according to taste rather than color.

This movement had the support of the Tobacco Merchants' Association, the Associated Cigar Manufacturers, and Leaf Tobacco Dealers, and the leading trade journals. A slogan, "After all nothing satisfies like a good cigar," was finally adopted and actually used by a few manufacturers, but within a year the efforts to obtain the advertising fund were discontinued because of the apparent lack of interest on the part of manufacturers in general, and as a result the entire project was dropped.

The writer does not propose to support the generalization that coöperative advertising of cigars would have been a successful means of meeting the cigarette competition, nor that it would materially increase or stabilize cigar demand. This is a question of judgment involving a consideration of a number of important factors. Professor Neil H. Borden, in a recent work on coöperative advertising writes as follows:

> The probable cost of advertising and selling efforts can be estimated fairly accurately; the probable results are likely to be judged only with uncertainty in our present lack of knowledge of the working of advertising and sales promotion. Some sort of judgment must be arrived at, however, to determine whether the advertising and promotional expenditure is likely to be justified by the results to be attained.[8]

Yet there are resemblances between the general situation in the cigar industry and the situation existing in certain other industries, the products of which have been successfully advertised and promoted through coöperative endeavors. For example, the cigar industry may occupy a position in the tobacco industry analogous to that of the salmon packers in the food products industry. Professor Borden, in analyzing the organization and promotional

[8] Neil H. Borden, "Cases on Coöperative Advertising," *Harvard Business Reports,* XI, 21.

activities of the Associated Salmon Packers, makes the following observation:

> The salmon industry was composed of numerous small producers, few or none of whom had ever carried any selling message aggressively to the consumer. It is the type of industry in which we note coöperative advertising frequently coming to the fore. Coöperative advertising and promotional effort offered possibilities that were precluded to individual packers. The volume of business of any one was too small to permit of an impressive approach to the consuming public. When the task was assumed by the group as a whole, however, a program of some magnitude could be undertaken without an excessive burden on any one manufacturer.[9]

The successful coöperative advertising of the Greeting Card Association may also be cited as a case in point.[10] The product was of the type requiring advertising designed to stimulate primary demand. Attempts on the part of individual manufacturers to stimulate selective demand were foredoomed to failure. Furthermore, the greeting card industry is made up of a number of relatively small firms, no one of them alone being large enough to assume the task of promoting the use of cards.

Since the trend away from cigars to other tobacco products partakes to some extent of a changing style trend, the successful coöperative advertising campaign of the Irish and Scottish Linen Damask Guild offers another suggestive example.[11] The manufacturers of linen damask suffered a serious decline in production after the War. They had, however, continued to distribute their products by methods found profitable before the War, and had made no efforts at aggressive promotional methods. In 1926 an organization representing over 80% of the Irish and Scottish linen damask production organized and promulgated an advertising campaign which was within two years successful in restoring the popularity and prestige of their products.[12]

Other examples might be cited of successful advertising through coöperative efforts in industries in which conditions appear to be

[9] Borden, *op. cit.*, p. 43.

[10] *Ibid.*, pp. 69-93.

[11] *Ibid.*, pp. 94-104.

[12] Professor Borden calls attention, however, to the fact that this campaign was especially successful in that there was some evidence of a changing style trend favorable to the linen damask already under way at the time the campaign was initiated.

similar to those in the cigar industry. It may well be, though, that a thorough canvass by the industry of the possibilities and the costs of this type of advertising may reveal sufficient reason for precluding the use of it as a means for stabilization. It is a consideration, nevertheless, which the writer feels should not be entirely neglected.

QUESTIONABLE AND UNFAIR ADVERTISING PRACTICES

So far as can be discovered, the cigar industry has, until quite recently, had to face few serious problems within its own ranks involving objectionable, unfair, or deceptive advertising. The more intense the competition, however, the greater is the tendency for advertisers to resort to derogatory statements about cigars in general for the purpose of emphasizing the particular merits claimed for their own products. This tendency is, of course, especially true in the cigarette industry, which has, nevertheless, continued to prosper, so it must not be concluded that such unfair advertising as has been resorted to in the cigar industry has constituted a major factor of instability. On the other hand, because of the great number of producing units in the cigar industry as compared with the cigarette industry, there is no reason to believe that the use by a few concerns of deceptive advertising has contributed to the welfare of the industry as a whole. The opposition of the trade to it is therefore justified.

A report of a committee of the Tobacco Merchants' Association in 1925 argues as follows:

> It is, of course, entirely proper for an advertiser to laud his own products, and to tell the public that his cigars are made of high grade tobacco; that they are mild; that they burn straight, and smoke freely; or to dwell upon any other legitimate selling point which may help to make his cigar popular. But to hold out, or even hint, to the public that other cigars do not smoke and do not burn, or if they do burn, they burn the tongue, or suggesting, though in a veiled form, that some cigars are made of cabbage leaves or some other leaves not intended for cigars, is not only unethical but almost certain to react injuriously upon the cigar business in general.[13]

More recently, the "spit" campaign of the American Cigar Company has presented a disturbing problem. This company, a subsidiary of the American Tobacco Company and the manufacturer

[13] *Tobacco,* January 7, 1926, p. 4.

of "Cremo," "Chancellor," "El Roi Tan," and other cigars, determined in 1928 upon a campaign designed to place the "Cremo" cigar among the leaders in the five-cent field. The production of this cigar was 100% mechanized and this fact was immediately capitalized in national advertising. Captions carrying the warning of a reputed health authority to "play safe when you put a cigar to your lips" were used, and cigar smokers were told that "Certified Cremos" were made and wrapped by machinery, untouched by human hands. Sales jumped immediately and at the end of the first six months of the campaign production, it was claimed, was 19,000,000 cigars behind orders.[14]

As the "spit" campaign continued, photographic representation of the hand-made method of production and "spit-tipping" were generously featured, with the obvious suggestion that all other brands of cigars were made under these insanitary and revolting conditions. Mr. George W. Hill, president of the company, is quoted as having said:

> Horrid as that word [spit] is, it drives home just what we intended. There would be few cigars smokers if everyone could make a trip through a cigar factory and see the unsanitary methods used in most, the custom-made cigar-roller wetting the end of each cigar with his own spit, and this in spite of his employer's effort to prevent it—it is just easier for a cigar maker so to do, that's all. . . . If the reader but knew it, at least 75% of the cigars are made by such unsanitary methods.[15]

Indignant objections were at once expressed by manufacturers from all parts of the country. The advertising was not only branded as false, but as designed, whether maliciously or not, to increase the already alarming defection from the ranks of cigar consumers. In February 1930 the National Better Business Bureau reported on results of a survey conducted by means of questionnaires and personal calls on various governmental and private agencies to determine the basis for the "spit-tipping" campaign. The findings are, in part, summarized as follows:

> The sources of information consulted by the Bureau were, in our opinion, those best qualified as authorities. Accepting their reports as authentic, it would appear that the allegations and implications of the Cremo cigar advertising campaign are unjusti-

[14] "Cremo Sales Soar to Record Heights," *Sales Management,* September 21, 1929, pp. 523 ff. An interview reported by T. P. Headen.

[15] *Ibid.,* p. 546.

fiable. Although it would appear that some hand-made cigars are manufactured under unsanitary conditions, this situation, according to the reports received by the National Better Business Bureau, appears to be so limited that any advertising based upon it without reference to a specific, offending brand, tends to cast an ugly shadow over all cigars.[16]

Most of the departments of health to which the Bureau's questionnaire was sent replied that there was no "spit-tipping" within their territory and that sanitary conditions were generally satisfactory. In three states evidences of the practice were admitted, but in each case it was declared to be against the rules and regulations of both the state and of the manufacturers.

As was pointed out by Mr. C. J. DuBrul, president of the DuBrul Manufacturing Company, makers of a widely used brand of cigar machinery, sanitation "is a function of management and not of the machine."[17] The possibilities for sanitation, he points out, are just as great in a hand factory as they are in a machine factory. Contending that, in the average machine plant, there are probably just as many human hands, if not more, touching the tobacco, Mr. DuBrul writes:

> Great stress has been laid upon only two operations in cigar manufacturing, whereas there are very many more. These two operations are bunch making and rolling. In the most modern machine plants we have an operator handling practically every piece of filler; there is another operator handling every piece of binder; another handling every piece of wrapper, and despite the subtle, if not misleading, advertising about the heading or tipping of cigars, the last operation, the so-called inspection, which is in part finishing and patching, there is an operator who, by hand, corrects any imperfections in production due to the shortcomings of the machine or of the material. . . . If this inspector is so inclined, it is within her possibilities to use the unsanitary methods which have been stressed so much in recent advertising, just as it is in any hand shop.
>
> By the hand methods the two operations mentioned above are performed by one or two operators, whereas in machine methods these operations require four operators, each in turn handling part of the tobacco.[18]

It is impossible at present to measure the amount of damage, if any, which the cigar industry has suffered as a result of the

[16] Cited in *Printers' Ink*, February 13, 1930, p. 116.
[17] C. J. DuBrul, "Hand Tipping," *Printers' Ink*, March 20, 1930, p. 132.
[18] *Ibid.*

"Cremo" campaign. Admitting, however, that it is unfair and unethical, it is hard to see how manufacturers of hand-made cigars with their relatively limited resources, are to effectively counteract such consumer reaction against their product as may be created by such advertising. Those manufacturers who are in a position to fight the charges or implications of insanitary methods, namely, the large producers already using automatic machines, will probably be interested mainly in demonstrating that they also use exactly the same sanitary machinery.

Early in 1930, P. Lorillard and Company challenged the "Cremo" advertising with their "Rocky Ford" cigar copy. Their first copy expressed their impatience "with the insidious propaganda about 'spit-tipped' cigars." The copy then continued: "All modern, popular-priced cigars—like modern cigarettes—are made by scientific machinery, in clean and sanitary factories. The old way of sealing cigars by human saliva has not been used by reputable cigar manufacturers for twenty years. So you may choose any one of many good five-cent cigars and get a clean, pure smoke."

Manufacturers of machine-made cigars have been hesitant about specifically announcing that fact to the public, although they have not claimed that their products were hand-made. Advertising campaigns of the type just discussed bring a change of front, but the focusing of consumer attention upon the superiority of the machine process will not accrue to the benefit of the small producers who are still producing mainly by the hand method.

THE EXCESSIVE NUMBER OF BRANDS, SIZES, AND STYLES OF CIGARS

National advertising, national distribution, and mass production are mutually related. National distribution, like national advertising, in the cigar industry has developed very slowly. During the early development of the industry, neither national distribution nor national advertising was profitable because of the nature of the manufacturing process. Yet even after mass production was made possible through technological improvements, the industry was slow to attempt national distribution. In addition to the extremely high initial advertising costs, another difficulty of considerable importance was the existence of a great number of different brands, sizes, and shapes of cigars. To progressive manufacturers it appeared better to make an intensive drive to secure the

local market where the particular brand was known than to invade territories already intrenched with hundreds of other local brands.

One of the first attempts to concentrate on a limited number of brands and to attain national distribution was made in 1910 by Samuel Paley and Company of Chicago. The company moved to Philadelphia in 1919 and at that time began the national advertising and distribution of cigars with a Java wrapper instead of the customary Havana and Sumatra. The efforts in this direction were successful and their chief brand, the "La Palina" cigar,[19] is now sold in about 90% of the existing retail outlets of the country. Advertising appropriations were increased from 560 thousand dollars in 1922 to 980 thousand dollars in 1925, and production increased from 55 million cigars to 220 million or 300% in the same period.

B. L. Grabosky was another pioneer in national advertising and distribution. He began in 1916 to concentrate on the "El Producto" brand, which is now one of the best selling brands in the country, in spite of the fact that the present parent company, the Consolidated Cigar Corporation, also pushes "Dutch Masters," "Harvester," and others, as well as the five-cent "Henry George" cigar.

In 1917, when the present General Cigar Company was formed, the various companies absorbed were making 150 brands, the annual sales of which were about 45,000,000 cigars. Reduction of the number of brands to five and a thoroughgoing reorganization of the distribution was rewarded by an increase in sales to 600,000,000 in 1921. Two years later, the president of the company, Mr. Fred Hirschhorn, asserted that about 65% of the company's production was distributed through its own jobbing houses and the balance through thirty independent jobbers in control of non-competitive territory. Eighty experimental retail stores were being operated for the purpose of discovering and solving merchandising problems.[20] The General Cigar Company has also recognized the importance of competing for special display privileges and dealer coöperation in the matter of pushing special brands. For example, if a dealer buys 300 cigars at one delivery and displays "Wm. Penn" and "White Owl" cigars on top of

[19] Now manufactured by the Congress Cigar Company, Inc.

[20] *Tobacco,* August 23, 1923, p. 5.

his case and one or more sizes of "Robert Burns" cigars inside, an allowance of 2% is made. The admission is made, however, that this is often a disturbing factor in that it fosters a roundabout method of price-cutting.[21]

Other important examples of this kind could be cited, but probably enough have been given to demonstrate the importance of brand concentration and of mass production and distributive methods. But much is yet to be accomplished, for the number of brands on the market today is still great. This situation is extremely confusing to the consumer as well as a hindrance to the progress of the industry itself.

Sizes and shapes of cigars, too, are still almost legion. For use in the mould-work system of cigar making, manufacturers have advertised moulds in thousands of different styles, yet the average consumer gives little or no attention to such minute size and style differences. The industry has been aware of this waste but thus far has been unable to secure the coöperation necessary to introduce standardization. Mr. P. H. H. Dunn of the Division of Simplified Practice, Washington, informs the writer that he corresponded in 1931 with various manufacturers of cigars regarding the possibilities of simplifying sizes and colors, but that there was such an apparent lack of desire to coöperate that the project was abandoned.

III. Federal Excise Taxation as a Factor of Instability

Cigar manufacturers have for many years, and especially since the World War, persistently claimed that exorbitant taxation of cigars has been one of the most important, if not the most important factor contributing to the unfavorable position of their industry. Some attention, therefore, should be devoted to an analysis of this claim.

Tobacco products as a whole have furnished a steadily increasing revenue to the government during the last two decades. The total internal revenue collected from tobacco products and from certain special taxes on the manufacture and sale of tobacco products was slightly over 58 million dollars in 1910, almost 296 million

[21] William Best, "Plus Values in Advertising," *Sales Management*, January 18, 1930, p. 104.

dollars in 1920, and over 450 million dollars in 1930. The tobacco revenue in 1913 constituted 22% of the total internal revenue collected and even in the face of the 782% increase in the total internal revenue from 1913 to 1930, due largely to the tremendous increase in revenue from the income tax, the tobacco revenue in 1930 still constituted over eleven per cent of the total derived from internal revenue sources.

Reference to Table 4, however, will show that the amount collected from small cigarettes increased from about 18 million dollars in 1913 to almost 360 million dollars in 1930, while the collections from large cigars were, in the prosperous year 1928, only about equal to the collections in 1913 and were actually over one and one-half million dollars less in 1930 than in 1913.

Prior to the World War the internal revenue duty on large cigars was at a flat rate per thousand regardless of selling price, first at $3.00 and later at $3.60. In accordance, however, with the revenue act of October 3, 1917, a definite graduated classification of all cigars weighing more than three pounds per thousand was provided, the changes in which are noted, together with changes in rates, in the table on page 35.

The wartime rates on cigars, which were continued after the close of the War until 1926, averaged $7.20 per thousand as compared with $3.60 per thousand prior to the War, an increase of 100%. These rates were protested by the cigar interests at the outset, not only because they believed them to be unduly severe, but also because they held that the imposition of the graduated scale was an improper method of taxing cigars. Little was done, however, toward influencing Congress to withdraw the graduated system, but every effort was made to obtain relief from the excessive rates. Testifying before the Ways and Means Committee in 1924 in behalf of the cigar interests, Mr. Joseph Mendelsohn said:

> After a careful study of this problem and with an experience of many years in the industry and a close familiarity with the vicissitudes which have followed it, we do not hesitate to say that the chief reason for the failure of cigar production to show a normal increase in line with that of other branches of the tobacco industry has been the burdensome taxation which was cheerfully borne during the War period but which we now submit should be lifted

TABLE 4

INTERNAL REVENUE RECEIPTS FROM TOBACCO PRODUCTS UNITED STATES 1913–1930

(Thousands of Dollars)

Years	Large Cigars	Small Cigarettes	Manufactured Tobacco	All Tobacco Products[1]
1913....	22,796	17,828	32,349	76,470
1914....	22,852	20,502	33,000	79,816
1915....	20,986	20,920	32,198	79,764
1916....	22,171	26,333	33,379	88,064
1917....	24,800	38,127	35,661	103,202
1918....	30,034	66,371	47,485	156,189
1919....	36,086	90,441	57,491	206,003
1920....	55,424	151,262	74,664	295,809
1921....	51,077	135,053	59,331	255,219
1922....	44,184	150,128	66,342	270,759
1923....	47,273	182,585	68,858	309,015
1924....	45,205	203,651	66,700	325,639
1925....	43,347	225,033	66,922	345,247
1926....	38,319	254,825	67,711	370,666
1927....	23,545	278,929	65,070	376,170
1928....	22,879	301,753	62,775	396,450
1929....	22,549	341,952	61,159	434,445
1930....	21,141	359,816	60,098	450,339

[1] Includes also receipts from snuff, large cigarettes, small cigars, and certain miscellaneous tobacco taxes.

Source: *Annual Reports of the Commissioner of Internal Revenue.*

proportionately to the lightening of other burdens, to which your committee is now giving consideration. . . .

In seeking a cut in the War tax rate on cigars we are not asking that this industry shall be relieved of any part of the burden of supporting the Government which it should properly bear; we are asking merely that you will enable this industry to live and to make progress in line with the development of the country. Further, we do not hesitate to predict that a rational revision of the War taxes on cigars will in a short time, if not immediately, result in such an increase in production and consumption as will net

TABLE 5

REVENUE RATES AND CLASSIFICATIONS OF CIGARS AND CIGARETTES

RATES PER THOUSAND

Retail Price	Revenue Act Oct. 3, 1917	Revenue Act Nov. 2, 1917
Large Cigars		
Class A Less than 4¢	$3.00	$3.00
Class B 4¢ to not more than 7¢	3.50	4.00
Class C More than 7¢ but not more than 15¢	4.50	6.00
Class D More than 15¢ but not more than 20¢	5.50	8.00
Class E Over 20¢	6.50	10.00
Small Cigars	0.87½	1.00
Cigarettes		
Small	1.65	2.05
Large	4.20	4.80

Retail Price	Revenue Act Feb. 24, 1919[1]	Revenue Act Feb. 16, 1926[2]
Large Cigars		
Class A Not more than 5¢	$4.00	$2.00
Class B More than 5¢ but not more than 8¢	6.00	3.00
Class C More than 8¢ but not more than 15¢	9.00	5.00
Class D More than 15¢ but not more than 20¢	12.00	10.50
Class E More than 20¢	15.00	13.50
Small Cigars	1.50	0.75
Cigarettes		
Small	3.00	3.00
Large	7.20	7.20

[1] The rates established in this Revenue Act were retained in those of November 23, 1921, and June 2, 1924.

[2] The rates established in this act have been retained in subsequent acts.

the Government a larger revenue from this source than is now received.[22]

Subsequently, in answer to a question, Mr. Mendelsohn estimated that, if a horizontal tax reduction were allowed, the cigar production and consumption would increase to an eight or ten billion annual total.

Tax relief was finally granted by Congress in 1926 (effective March 29) and consisted of reductions of 50% each on Classes A and B, 44% on Class C, and 10% on Class E. The effect of these reductions thus far, however, has not been such as to substantiate the contentions of the manufacturers and others who urged the relief.

The total large cigar production fell from 6,495 million to 6,392 million in 1928, increased slightly to 6,481 million in 1929, and in 1930 was only 5,881 million. Furthermore, the revenue derived declined from 38 million dollars in 1926 to 21 million dollars in 1930. The total revenue from all tobacco products, however, increased from 371 million dollars in 1926 to 450 million dollars in 1930, due to the increase in cigarette revenue. Cigarettes were granted no tax relief and therefore continued to bear the flat war-time rates of $3.00 per thousand on small cigarettes and $7.20 per thousand on large types.

Assuming that heavy taxation was a major factor contributing to the decline in production and consumption of cigars during the post-war period, it appears from an examination of the production figures that such relief as was obtained by reason of the downward tax revision of 1926 accrued solely to Class A cigars.

While the production of Class A cigars increased from 2,860 million in 1926 to 3,590 million in 1930, all other classes decreased. Between 1926 and 1929, Class A cigars increased 730 million and all other classes decreased 714 million. Even Class B, upon which the tax rate was reduced 50% and to a rate actually below the pre-war rate, decreased 369 million or 30 million more than the heavier taxed Class A cigars.

It might be contended that even though the tax rates on cigars were lowered substantially in 1926, they are still on the average much higher than the pre-war flat rate. When consideration is given to the fact, however, that the pre-war bulk of production

[22] *Revenue Revision,* 1924, Hearings before the Committee on Ways and Means, House of Representatives, January 1924, pp. 422-423.

was, as it is today, in the first three classes, it is evident that the rates are actually somewhat lower than the pre-war rates.

The conclusion to be drawn, therefore, would appear to be that, while taxation has doubtless been a factor of consequence with respect to the decline of consumption and production, other factors have been of greater importance. Tax reduction, rather than improving the situation in the industry as a whole, gave aid to the already rapidly progressing movement toward concentration, mass production, and utilization of machinery in the lowest-priced field.

CHAPTER IV

FACTORS OF INSTABILITY ON THE SUPPLY SIDE: RAW MATERIALS AND MANUFACTURING METHODS

I. Raw Materials

THE NATURE AND IMPORTANCE OF THE RAW MATERIAL SUPPLY

The chief types of cigar tobacco consist of wrapper, binder, and filler leaf. The filler leaf is used to form the main body of the cigar and gives to it most of its aroma and flavor, the binder leaf is used to surround and hold the filler together, and the wrapper leaf constitutes the smooth outer cover.

For the supply of certain types of cigar leaf the United States is largely dependent upon outside sources. For the period from 1926 to 1930 the average yearly importation of cigar leaf suitable for wrappers was 6,277,000 pounds. Practically all of this was received from the Dutch East Indies. For the same period the average importation of filler tobacco was slightly more than 22,000,000 pounds. The great bulk of this amount was received from Cuba, but it does not include important amounts received from Puerto Rico and small amounts from the Philippines. While the amount of filler received from Cuba is only a small percentage of the total filler produced and used in the United States, the percentage being about 13% in 1931, the imports are of a high quality and widely demanded for blending purposes and for the clear Havana products. Puerto Rican tobaccos, which are used mainly for filler, are also important to the United States cigar industry. In 1931, 21,900,000 pounds were obtained from this source. The United States exports scarcely any cigar tobacco, the amount in 1931 being only 3,794,000 pounds of filler tobacco as compared with a domestic production of 91,857,000 pounds of cigar leaf types and imports of over 16,000,000 pounds.

In only a few areas of the United States are the soil and climate favorable for the growing of wrapper leaf of the requisite color,

flavor, burn, and size. These areas are found mainly in the Connecticut Valley, including a number of counties of Connecticut and Massachusetts, and in several border counties in the states of Florida and Georgia.

The state of Wisconsin is particularly noted for the production of a fine grade of binder leaf. Smaller amounts of this type of leaf are also grown in the Big Flats and Onondaga sections of New York, extending into Pennsylvania, and in the Connecticut Valley.

Cigar filler tobacco is produced in Pennsylvania, Ohio, Indiana, Georgia, and Florida. Pennsylvania is the largest producing area, its output constituting on the average about 60% of the total. The Miami Valley section of Ohio and Indiana produces about 25% of the total of this type and the remainder is grown in certain counties in Georgia and Florida.

The fact that the raw material supply has become concentrated in a few limited areas has in one way been favorable to cigar manufacturers in that it has simplified purchasing. Purchases of leaf are made at the farm, auction warehouses, or through coöperative agencies, although the latter have been of slight importance in cigar leaf marketing. On the other hand this situation of concentrated growing areas has limited to a considerable degree the bargaining position of the manufacturers. A continuous and adequate supply of raw material is to be obtained only from these relatively few specialized producing areas.

Furthermore, the growing and cultivation of cigar tobacco is a highly specialized industry. A period of from seven to nine months elapses between the time the seed beds are prepared and the harvesting, during which time constant care and skill are required of the grower. In fact, it has been asserted upon competent authority that the requirements of the tobacco grower are probably more exacting than those of any other plant industry, and that this is chiefly due to the complicated factor of quality in tobacco.[1]

After the transplanting and during the growing period, not only careful cultivation, but also the additional operations of worming, topping, and suckering are necessary. Topping consists of pinching off the seed or flower buds and the topmost branches of the plant in order to force a better development of

[1] *Year Book of Agriculture*, 1927, p. 624.

the remaining leaves.[2] Suckering, or the removal of extraneous branches, must be performed two or more times in order to insure the highest yield and quality of leaf.

Nor is the farmer's work completed when the tobacco has been harvested. It must next be arranged properly in curing sheds, constructed for the purpose of controlling air circulation and moisture conditions. This process, which requires from six to eight weeks, is for the purpose of developing the brown color in the leaf and for toughening and reducing the size of the midrib and veins.

After the curing process and when the leaves have been softened by processing in the dampening cellars usually located under the curing sheds, the farmer strips the leaves from the stalks, sorts them into grades according to quality and size, ties them into large "hands" of from 14 to 18 leaves each, and then packs them into bundles or bales of from 50 to 100 pounds each. At this time, or even before it is packed, it is usually either examined and purchased by county buyers or is purchased at a general average price without being examined.

The bundles are next delivered to a place designated by the buyer, and the tobacco is then ready to be put through the fermentation or sweating process in storage warehouses. Sweating is necessary in order to remove the harsh raw taste of the tobacco and to develop its flavor and aroma. This process, which may be accomplished by several different methods, usually requires from six to eight weeks. After the sweating period the cases are opened, sampled, and offered for sale to manufacturers who must put it through a re-sweating and other processes before it is ready for the utilization in cigar manufacture. It must be noted, however, that today some of the large-scale cigar manufacturers own their own processing plants and purchase their tobacco direct from the farmer.

The above discussion is by no means intended as an adequate technical account of cultivation and processing of cigar tobacco, but is given merely to indicate the nature of the difficulties continually confronting cigar manufacturers in their efforts to secure adequate raw-material supplies of uniformly high quality.

[2] A detailed explanation of the methods of cultivation appears in a bulletin by Otto Olson, *Cigar Tobacco Production in Pennsylvania,* Farmer's Bulletin No. 1580, United States Department of Agriculture.

THE WRAPPER TARIFF AS A FACTOR OF INSTABILITY

One increasing source of concern to a large number of cigar manufacturers is that provision of our tariff act which affords protection to domestic wrapper tobacco. A tariff on wrapper leaf has been in force since 1883.

Prior to the development of the shade-grown variety of cigar-wrapper leaf in this country, practically all cigars were wrapped with domestic sun-grown leaf. At present, however, it is estimated that only about two per cent of American-made cigars are wrapped with sun-grown leaf.[3] With the growth of the cigar industry there has developed a growing demand for a special type of leaf for wrapping purposes. The consuming public has become accustomed to an outer wrapper which combines the qualities of strength and elasticity, uniformity of color, smoothness, an even burn, and a neutral taste or flavor.

Wrapper leaf possessing these requisite characteristics can be grown under natural conditions in only a few limited areas. In 1928, 98% of our total imports were from the Netherlands. This tobacco is grown in the Dutch East Indies, chiefly in Sumatra and Java, which, in addition to the natural advantages of a rich soil and a tropical climate, have an abundance of cheap native and imported Chinese coolie labor.

About 1896 it was discovered that a leaf resembling the Sumatra variety could be grown under artificial shade in certain regions of Connecticut, Georgia, and Florida. The acreage developed rapidly and in 1929 the 12,600 acres under shade produced 14,844,000 pounds of wrapper leaf. The same year 8,563,445 pounds of wrapper leaf were imported.

The producers of shade-grown leaf in this country have been consistently protected by a high protective tariff. The duty on imported unstemmed wrapper leaf[4] in 1883 was $0.75 per pound, $1.85 in 1897, and $2.35 under the Emergency Act of 1921. In 1922 it was reduced to $2.10, but was raised again in 1930 to $2.27½ per pound. The ad valorem equivalents have ranged from 84 to 263 per cent.

Cigar manufacturers who use foreign wrappers have vigorously

[3] U. S. Tariff Commission, *Report on Cigar-Wrapper Tobacco,* No. 16, second series, page 8.

[4] Imports of stemmed wrapper leaf are relatively unimportant.

protested the rates, especially since the War; some on the ground merely that they are excessive, and others on the ground that most of the imports, i.e., those from Java and Sumatra, are not in competition with domestic wrapper leaf. With equal vigor and with more effectiveness so far as results are concerned, the shade-leaf producers have urged increasing protection for an infant domestic industry, subject to the intense competition of a foreign commodity produced by peon labor and under outright monopoly conditions. In 1930 the domestic growers of wrapper leaf applied to the Treasury Department for exclusion from importation into this country of tobacco produced in Sumatra on the ground that it was produced by convict labor and was therefore subject to Section 307 of the Tariff Act. Section 307 prohibits the importation of goods produced in whole or in part in any foreign country by convict, forced, or indentured labor under penal sanctions except in cases in which the quantities produced in the United States are insufficient to meet consumptive demands. The Treasury Department ruled, however, that the embargo provisions, applicable against unneeded imports of indentured labor production, could not be invoked against Sumatra wrapper because of the insufficiency of the domestic supply. Relief under this provision, even though it had been granted, would probably have been only temporary, since the Dutch Colonies have already (March 1931) passed laws providing for the gradual abolition of indentured labor on the tobacco plantations.

The ramifications of the very extensive arguments on the wrapper tariff presented in the last few years before Congressional committees need not be entered into for the purpose of this study. It is important to point out, however, that, while Sumatra and Java wrappers are used on various classes of cigars, the Florida-Georgia wrapper leaf is the only domestic leaf used to any extent on the five-cent cigars or cheaper than five-cent cigars. But it requires from 2 to 2¼ pounds of Florida-Georgia shade-grown tobacco to wrap 1,000 cigars, as compared with 1¾ to 2 pounds of Sumatra leaf. Again, a higher degree of standardization in grading and packing has been attained by the Dutch producers than by the Florida-Georgia producers.[5]

Connecticut shade-grown wrapper leaf, which for the past few

[5] United States Tariff Commission, *Report on Cigar-Wrapper Tobacco*, No. 16, second series, p. 37.

years has constituted on the average somewhat over 60% of the total domestic wrapper, is largely used on high-priced cigars. While somewhat less of it is required to wrap a thousand cigars than is required of the Southern variety, yet more of it is required per thousand than of the Sumatra variety.

Furthermore, the relative importance of the duty on wrappers varies with the type of cigar to be wrapped. The Tariff Commission has illustrated this point as follows:

> The 5-cent cigar, wrapped with imported Sumatra, may be considered first. For this cigar, the average quantity of wrapper used varies from about 1.75 to 2 pounds per thousand. Thus the duty in the act of 1930 of $2.27½ per pound is equivalent to between $3.98 and $4.45 per thousand cigars. The importance of this duty to the manufacturer becomes evident when it is noted that the total average prices paid for the wrapper of this type of cigar varies from about $5.50 to $6.25 per thousand cigars. For the higher priced cigars wrapped with Sumatra leaf the relative importance of the wrapper duty is probably somewhat less. For cigars wrapped with imported Java leaf (requiring from 2½ to 3 pounds per thousand cigars) the duty is equivalent to from $5.69 to $6.82 per thousand.[6]

Many cigar manufacturers, especially those making the low- and medium-priced cigars, have an established trade in the foreign wrapper leaf which has been developed at great cost to themselves, and which they fear will be lost if, through the high protective duty, they are forced to resort to a different wrapper. On the basis of the imports from the Netherlands for the five-year period 1924-28, the Tariff Commission has estimated that about 41% of the total domestic production of cigars is wrapped with Sumatra tobacco, and that about 50% of the domestic production is wrapped with imported leaf.[7]

Sumatra leaf is used chiefly on cigars made of domestic filler and binder, types of tobacco constituting more than 90% of all domestic cigar tobacco, and this explains why the cigar manufacturers have been actively supported by the domestic tobacco growers in the efforts made to obtain tariff relief. During the tariff hearings in 1929, for example, testimony opposing tariff increases on imported wrapper was presented by representatives of such organizations as the Northern Wisconsin Coöperative Tobacco Growers' Association, the Independent Tobacco Growers

[6] *Ibid.*, p. 16.
[7] *Ibid.*, p. 14.

of Connecticut and Massachusetts, and the Lancaster County (Pennsylvania) Tobacco Growers' Association.

The cigar manufacturers referred to above as opposed to the tariff on Sumatra tobacco must not be understood to include all manufacturers of cigars. A numbers of users of shade-grown leaf have presented briefs before Congressional Committees in support of the interests of domestic shade growers. They evidently believed that the advantage they would derive from the resulting increase in cost to their competitors using Sumatra wrapper would more than offset any increase in price they might have to pay for their Florida wrapper. The York County (Pennsylvania) Cigar Manufacturers' Association, for example, submitted a brief to the Committee on Ways and Means in January 1929 setting forth the fact that the members of the association were producing about 670,000,000 cigars annually, the great bulk of which were of the five-cent grade, and that they were using about 85% Florida wrapper.[8] They, therefore, requested Congress to increase the duty on Sumatra wrapper to $4.00 per pound, contending that Florida wrapper was quite on a par with Sumatra leaf and that it was so considered by the consuming public.

The Tobacco Merchants' Association of the United States, however, presented evidence at the same time to the Committee on Ways and Means showing that, in the Yearbook of the York County Manufacturers' Association, containing the advertisements of the products of 54 of the leading York County manufacturers, not a single advertisement indicated the use of Florida wrappers, and that ten of the leading producers featured the use of Sumatra wrappers for their cigars.

Finally, attention should be called to the fact that, due to the extremely high costs of producing shade-grown tobacco in this country, the shade-leaf business has become concentrated in the hands of a relatively few large and prosperous corporations,—almost entirely so in Connecticut and very largely in the Florida-Georgia area. Wrapper production in this country not only requires an exceptionally large outlay of capital in the form of posts, wire, cloth, and other items, but the product itself requires careful handling and elaborate grading and standardization, all of which has led to the rapid development of large-scale corporate

[8] *Hearings on the Tariff*, House Ways and Means Committee, 70th Congress, 2nd Session, Schedule 6, 1929, p. 3479.

farming. At the present time shade-grown tobacco in the Connecticut Valley is produced by two large corporations, the American Sumatra Tobacco Corporation, with a property valuation of $5,000,000,[9] and the Hartman Tobacco Company, and by a number of smaller companies. In the Florida-Georgia district about one-third of the acreage is planted by one large company, one-third by some half-dozen smaller concerns, and the remainder by individual farmers.

In view of the fact, then, that Sumatra wrapper leaf plays such an important part in American cigar manufacturing, the high protective barriers erected against it in favor of a limited number of American producers of a high-cost, inferior substitute, have constituted an important factor contributing to instability in the cigar manufacturing industry.

FLUCTUATIONS OF LEAF STOCKS ON HAND

All branches of the tobacco industry are confronted with the raw-material problem of fluctuating stocks on hand. The current crop of leaf tobacco cannot be consumed immediately. Tobacco, as has been noted, is a product, the flavor and aroma of which are developed and improved only by proper curing and aging. These processes in the cigar industry consume from one to three years.

Either undue fluctuations or any tendency for stocks in the process of curing and aging to become cumulatively lower as a result of the fluctuating raw-material supply conditions would, therefore, constitute a disturbing element of some importance to the industry. While the fluctuations of cigar stocks on hand have not been violent, significant changes in the relationship between stocks and amounts consumed in manufacture have occurred in recent years. Figures representing disappearance have been computed for important types of tobacco by the Bureau of Agricultural Economics by adding the amount of production and stocks on hand October 1 of one year and subtracting from this the amount of stocks on hand October 1 of the succeeding year.[10]

The data presented in the following table and chart are for Ohio cigar leaf, types 42-44, Pennsylvania cigar leaf, types 41-53,

[9] United States Tariff Commission—*Report on Cigar-Wrapper Tobacco,* No. 16, 1931, pp. 34 and 35.

[10] *Yearbook of Agriculture,* United States Department of Agriculture, 1931, p. 706. Figures are on a green weight basis, and disappearance includes consumption, exports, and losses.

and Wisconsin cigar leaf, types 54 and 55. These important cigar types comprise over 75% of the total cigar leaf used in manufacture in this country.

TABLE 6

CIGAR LEAF

PRODUCTION, STOCKS, DISAPPEARANCE, AND PRICE
1912–1930

(Million Pounds)

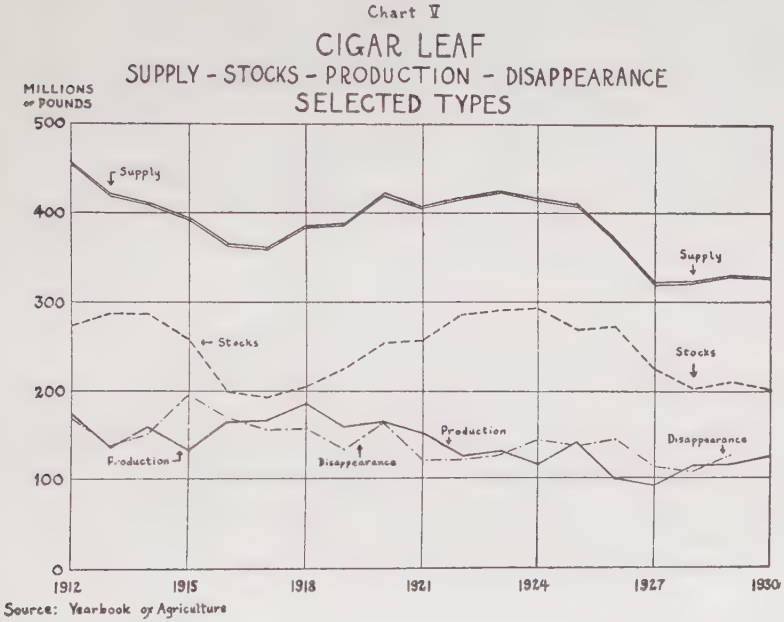
Year	Production	Stocks on Hand Oct. 1	Total Supply	Disappearance Year Beginning Oct. 1	Avg. Price per Pound (cents)
1912.....	172.0	272.6	451.6	168.1	9.2
1913.....	134.8	283.5	418.3	165.5	10.2
1914.....	155.9	252.8	408.7	150.0	8.0
1915.....	133.6	258.7	392.3	193.3	8.1
1916.....	163.1	199.0	362.1	168.1	21.0
1917.....	164.3	194.0	358.3	155.7	20.8
1918.....	183.0	202.6	385.6	155.9	17.3
1919.....	159.2	229.7	388.9	136.0	20.5
1920.....	164.6	252.9	417.5	162.6	14.0
1921.....	151.6	254.9	406.5	121.6	13.3
1922.....	129.1	284.9	414.0	123.6	14.5
1923.....	133.0	290.4	423.4	130.0	14.4
1924.....	118.6	293.4	412.0	144.0	12.6
1925.....	140.5	268.0	408.5	138.3	11.9
1926.....	100.3	270.2	370.5	146.5	10.9
1927.....	96.0	224.0	320.0	116.0	14.9
1928.....	119.0	204.0	323.0	112.1	15.3
1929.....	120.6	210.9	331.5	129.1	13.6
1930.....	126.7	202.4	329.1		12.2

Source: *Yearbook of Agriculture.*

The trend of production and disappearance of cigar leaf has been downward since the War period, but the production has at

times exceeded and at other times fallen under the amounts representing annual consumption or disappearance with obviously differing effects on stocks on hand. The average amount of stocks on hand for the period 1912-1930 was 239 million pounds, an amount equal to only about one and one-half times the average annual disappearance. The minimum spread between stocks and disappearance during the period was 31 million pounds in 1916 and the maximum was 249 million pounds in 1924.

From 1912 to 1916, when production averaged about 17 million pounds annually below disappearance, stocks declined a little over



31%. From 1917 to 1923 production exceeded disappearance and stocks were accumulated, but average prices per pound advanced from 8.1 cents in 1915 to 21.0 cents in 1916 and averaged 17.3 cents for the period. As prices declined, however, production also fell off, and, since 1923, has averaged about 17 million pounds below disappearance. During this period, therefore, stocks on hand were again depleted, the decline in stocks having been over 30% and that for disappearance only about 22%.

It must not be supposed that, had the 1912 to 1918 rate of

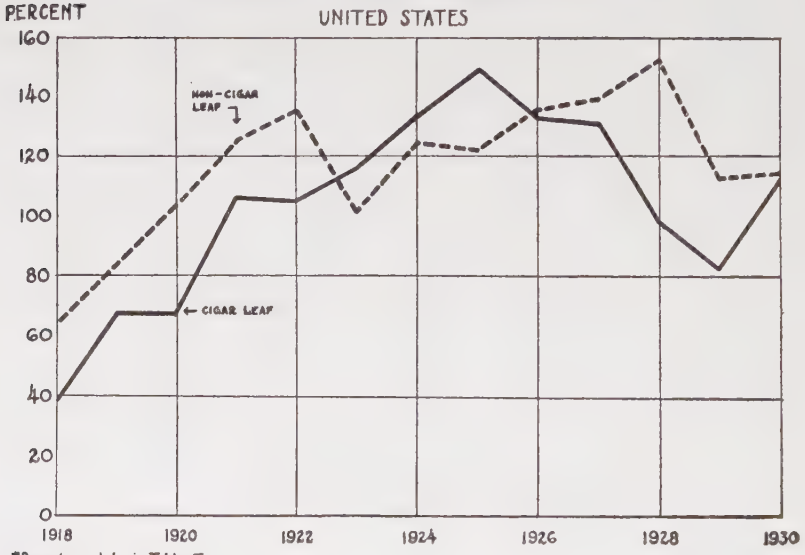
cigar-leaf production continued, the pre-war rate of cigar production would have been maintained, but the fact remains that the cigar manufacturing industry has been subject to disturbing fluctuations of stocks on hand.

From an analysis of such data as are available, the cigarette and other branches of the tobacco industry appear to have attained a more favorable position than the cigar industry with respect to the amount of stock on hand. In Table 7 stocks reported January 1 of each year from 1918 to 1930 are compared with the

Chart VI

PERCENTAGE EXCESS OF CIGAR AND NON-CIGAR LEAF STOCKS OVER AMOUNTS USED IN MANUFACTURE*

UNITED STATES



*Based on data in Table 7

amounts of leaf used in domestic manufacture. The average excess of stocks over amounts of non-cigar leaf tobacco used during the period was 649 million pounds, and for cigar types the average excess was 157 million pounds. The percentage figures representing the relationship between excess stocks and actual amounts of leaf used are represented graphically in Chart VI. Only in the three years 1923-24-25 was the percentage excess of stocks over amounts used in manufacture greater for cigar leaf than for non-cigar leaf tobacco. Furthermore, since 1925 the

TABLE 7

STOCKS AND CONSUMPTION OF CIGAR LEAF AND NON-CIGAR LEAF TOBACCO, 1918–30

(Millions of Pounds)

Year	Stocks Reported January 1*		Pounds of Non-Cigar Leaf Used in Manufacture†			Pounds of Cigar Leaf Used in Manufacture†		
	1	2	3	4	5	6	7	8
	Non-Cigar Types	Cigar Types	Total Used	Stocks in Excess of Needs Column 1 minus Column 3	Percentage Relation of Column 4 to Column 3	Total Used	Stocks in Excess of Needs Column 2 minus Column 6	Percentage Relation of Column 7 to Column 6
1918	893	223	546	347	63.5	162	61	37.6
1919	913	254	497	416	83.7	152	102	67.1
1920	963	283	471	492	104.4	169	114	67.4
1921	1,062	297	469	593	126.4	143	154	107.6
1922	1,175	313	496	679	136.8	152	161	105.9
1923	1,068	347	529	539	101.8	160	187	116.8
1924	1,220	358	541	679	125.5	153	205	133.9
1925	1,266	371	569	697	122.4	149	222	148.9
1926	1,385	356	585	800	136.7	152	204	134.7
1927	1,416	354	591	825	139.5	153	201	131.3
1928	1,520	301	603	917	152.0	151	150	99.3
1929	1,374	279	645	729	113.0	152	127	83.5
1930	1,374	293	642	732	114.0	138	155	112.3

* Compiled by the Bureau of Census and the Department of Agriculture from reports of Domestic Manufacturers and Dealers.
† From *Reports of the Bureau of Internal Revenue.*

situation with respect to cigar-leaf stocks has become relatively more unfavorable as compared with non-cigar leaf stocks. The change of direction indicated for cigar leaf in 1930 is due mainly to a substantial decrease in amount used in manufacture.

Thus, while stocks of cigar and non-cigar types of tobacco leaf have both exhibited fluctuations, the production of non-cigar types of tobacco has increased at such a rapid rate that the manufacturers of other tobacco products, especially cigarette manufacturers,[11] have been able to attain an increasingly favorable position with respect to stocks on hand.

II. Manufacturing Methods and Changing Technological Conditions

EARLY MECHANICAL AIDS IN CIGAR MAKING

Because of the high degree of skilled workmanship demanded in the making of cigars, the perfection of a machine which would combine the deftness of the human hand and the difficult selectivity required in blending, was for long considered impossible.

A cigar is composed of three parts, the filler, binder, and wrapper. The filler, as was pointed out above, constitutes the main body of the product and gives to it most of its aroma, the binder is a leaf which surrounds and holds the filler together, while the wrapper is the outside leaf which gives the smoothness and fineness and sometimes a certain amount of aroma. No binder is used, however, in the strictly Spanish method of cigar making. The cigar maker takes the pieces of filler into the palm of his hand, deftly arranges, rolls, and shapes them into the bunch, and completes the process by rolling the wrapper around the bunch. The hand-made method generally, however, includes the placing of a binder around the bunch before the outer wrapper is applied.

The tools and other materials required for these operations consist simply of a rolling board about nine by twelve inches in size, a gauge to measure the size of the cigar, a broad knife, and a jar of gum tragacanth for use in finishing the head.

Most of the cigars consumed in the United States prior to the

[11] Favored, it has been maintained, by monopolistically controlled purchasing. See T. J. Woofter, *The Plight of Cigarette Tobacco,* University of North Carolina Press, 1931.

Civil War were imported from Germany and Cuba. The relatively few cigars which were produced in this country were strictly handmade. After the Civil War, however, there was an increasing demand for American-made cigars and it was discovered that there was a sufficient number of immigrant cigar makers to make it profitable for American cigar manufacturers to compete with foreign producers. Furthermore, the cigar making device known as the "mould" was introduced to this country from Germany in 1869. A mould is merely a block in which is carved a hollow of the size and shape desired for the cigar.[12] The prepared bunch is placed in the hollow and shaped under pressure. Such a device made division of labor or teamwork possible, and being introduced coincidentally into this country with the immigration of large numbers of Bohemian women cigarmakers,[13] gave added impetus to cigar production in the United States.

Although protested vigorously by the Cigar Makers' International Union, the use of moulds became increasingly prevalent, and teamwork, except for the more expensive cigars, became the predominant method of manufacture. Under the usual teamwork system, three workers coöperate in the making of the complete cigar, one making the bunch, and the other two performing the task of rolling and finishing. The method is cheaper than the true Spanish or Cuban handmade method because part of the work is done by relatively unskilled labor and because from five to seven times as many cigars can be made in a given period of time as can be made by the strictly handmade method.

As early as 1885, DuBrul & Company of Cincinnati manufactured a device for working three sets of moulds at once, two of them being kept under pressure while the third set was being filled with bunches.[14]

Another early-introduced tool which became a very important aid in cigar manufacturing was the suction wrapping device. The suction board was invented and patented in 1883 and soon elaborated into the suction rolling table. This suction device was merely a perforated plate of the size and shape of the wrapper

[12] The mould was invented and used in England about 1860, when the "bellied" cigar became popular. See Arthur Edmund Tanner's "Tobacco," in *Pitman's Common Commodities of Commerce* (London, 1912), p. 51.

[13] See Edith Abbott, *Women in Industry* (D. Appleton and Co., 1924), Chapter IX.

[14] C. G. Warnford Lock, *Tobacco* (E. & F. N. Spon, London, 1886), p. 245.

or binder leaf. A vacuum was created underneath it and when in place a roller knife cut the leaf neatly and quickly to the exact requirement of the cigar, which was brought directly over the wrapper and held tightly against it for the wrapping process.

Bunch-making machines of various kinds were gradually introduced during the decade 1910-1920. In 1912 the Cigar Machine Corporation of Baltimore had a short-filler bunching machine on the market which was used in conjunction with their wrapping machine. Two operators were required for the bunching machine, one to feed the prepared filler into the machine, and the other to put the binder in place as the bunch came through. The capacity of the machine was about 10,000 bunches per day. Although somewhat unsatisfactory at first, most of the short-filler bunching machines have now been developed to a high degree of speed, efficiency, and accuracy.

Long-filler bunch machines have also been satisfactorily employed for a number of years. The Colwell Cigar Machine Company introduced an automatic machine for this purpose in 1919, which it was claimed would produce from 3,000 to 4,000 cigars per day. The Universal Tobacco Machine Company has had a model on the market since 1927 which blends as well as bunches the prepared long filler, and which is adjustable to different sizes or shapes of bunches without the necessity of changing parts or designs.

THE AUTOMATIC LONG-FILLER CIGAR MACHINE

All the above-mentioned mechanical aids have played an increasingly important part in cigar manufacturing, but it is the automatic cigar machine which bids fair to revolutionize the industry. This marvelous invention, a product of the International Cigar Machinery Company, is the only fresh work cigar machine making a complete long-filler cigar in one continuous series of operations. The International Cigar Machinery Company[15] spent about twenty-six years in experimentation on the device at a cost of over $7,000,000. These automatic machines were introduced to the trade in 1919, and in 1930 there were 4,500 in use, most of them in the United States.[16]

The machines utilize practically any grade or kind of filler,

[15] A subsidiary of the American Machine and Foundry Co., 511 Fifth Avenue, New York City.

[16] *Fortune,* June 1930, p. 58.

binder, or wrapper tobacco, and make a complete headed cigar in one continuous series of operations, uniform in size, shape, and weight. One machine and four semi-skilled operators, usually girls and one of them an inspector, produce 480 cigars per hour, whereas a good day's work for a skilled hand worker is about 300 to 400 cigars.

No special skill is required of any of the operators, and the services of one shop mechanic only are required for a battery of eight machines. The floor space occupied is about 5′ 10″ by 8′ 9″. A one-half horse power motor is required per machine and a small one-twentieth horse power auxiliary motor.

A detailed technical description of the machine need not be given here. The operators' duties are simply the placing of the filler leaf on the feed belt and the laying of the binder and wrapper leaf on the cutting dies. After the filler operator places the cigar material on an endless feed belt, the tobacco distributes itself evenly and feeds forward, manipulated and molded to the desired size and shape, and is automatically cut and trimmed. This prepared charge comes before the second operator, the binder layer, who places a binder leaf which is held down by suction and cut to the correct form for the type of cigar to be made. A carrier picks up the leaf and deposits it on a rolling apron where it is rolled around the charge to make the bunch. The bunch proceeds through a series of softening, crimping, and trimming operations, and finally arrives before a third operator, the wrapper layer, where it is wrapped in practically the same manner as was the original charge. After further softening, smoothing, and rolling, the cigar is deposited on the inspection table before the fourth operator, who examines the cigars prior to removal. The operators can usually keep the machine running continuously, being able to lay the tobacco leaves correctly on the dies during the time allowed by the machines.

OTHER TECHNOLOGICAL CHANGES IN THE CIGAR INDUSTRY

This short description of the mechanics of cigar manufacturing would be incomplete without some mention of a few of the various mechanical aids used in the stages preparatory to the actual manufacture and finally in sorting and packing the manufactured product.

In some of the largest and most modern cigar factories, all

of the manufacturing processes are coördinated into one continuous series of operations by means of conveyor belts and automatic lifts for handling materials and for delivery of cigars from place to place and from one floor to another.[17]

Tobacco stripping and booking machines have been perfected and widely used. These machines, each requiring one operator to place the leaves, cut and entirely remove the stems from the leaves, and bunch the leaves evenly and neatly in right- and left-hand books, ready for the rolling table.

Stem crushing and booking machines make possible the utilization in certain types of cigars of the entire leaf at a saving of from 15% to 25%. The machine crushes the stem to the thinness of the leaf, removing the gum moisture at the same time.

Automatic banding machines fasten the bands on cigars at the rate of 20,000 to 30,000 per day; another machine wraps the cigars neatly in cellophane at the rate of about 25,000 per day; and still another machine receives the completely filled packed cigar boxes upon which it automatically affixes and cancels the internal revenue stamps at the rate of 50 to 60 boxes per minute.

AUTOMATIC MACHINERY AND CIGAR PRODUCTION BY CLASSES

Since the introduction of automatic machinery, the most intense competition in the cigar industry has centered around Class A cigars, that is, those manufactured to retail at not more than five cents each. Because of the high cost of installing and using automatic machinery, the great majority of the machines have been concentrated in the hands of a relatively few large-scale producers. The manufacturer must pay the International Cigar Machinery Company the cost of producing the machine, now about $4,500; must also assume obligations to pay a royalty on the production and a minimum charge whether the machine is in use or not.[18] Volume production, therefore, must be attained and the low-priced field has quite naturally been the one exploited.

[17] H. P. Wurman and R. D. Touton, "Handling Unity," *Factory and Industrial Management,* August 1931, pp. 183-6.

[18] The writer has been informed by the Secretary of the International Cigar Machinery Company that not all machines are leased on this basis, some being leased on the basis of a flat monthly rental irrespective of the number of cigars actually produced on the machines. Details concerning this matter, however, cannot be made public.

Due to the fact that cigar manufacturers using automatic machines have, with few exceptions, feared to advertise openly to the public the extent to which they employ machine processes, adequate research data on machinery and machine production are impossible to obtain. The manufacturers of the automatic machines would, of course, be glad to make such information available, since it is their conviction that machine-made cigars are superior to the best handmade cigars. Yet, because of the close contractual relationship existing between themselves and the cigar manufacturers, they can release very little of the information they possess. Certain facts are available, however, and these may serve to indicate fairly well the important position attained in the industry by the automatic machine.

According to the records of the Standard Statistics Company, the number of automatic machines in use on various dates was approximately as follows:

December	1930	4,170
September	1930	4,000
February	1930	3,631
September	1929	3,596*
October	1928	3,000
March	1927	2,407
December	1926	2,279
July	1926	1,956
December	1925	1,602
June	1925	1,411
December	1924	1,177
June	1924	1,085

* Includes 347 foiling machines.

Between 1924 and 1930 there was an increase in the number of machines in use of over 284%. During the same period the total production of large cigars declined 11%, and Class A production increased only slightly more than 38%.

No figures are available as to the actual average annual rate of production on these machines. Many improvements have been made since 1924 in various parts of the machine, but it has not as yet been found possible to speed up to any appreciable extent the hourly output of finished cigars. The present normal rate of production is about 480 cigars an hour. The manufacturers of

the machine conservatively estimate the normal yearly output at 1,000,000 cigars per machine. On the basis of the above machinery figures, probably an average of a thousand machines were in use during 1924. At the rate of production of 1,000,000 per year, these machines could have produced in 1924 about 15% of the total large cigars manufactured and over 38% of Class A cigars. In 1930, assuming that there were on the average about 3,900 machines in operation, these machines could have produced over 66% of the total cigars and over 300 million more Class A cigars than were in fact actually manufactured.

Various estimates have been ventured as to the proportion of cigars now made by machinery. Even the manufacturers of the automatic machine can state only approximately the number, because of the fact that some machines are on a flat rental basis. Their estimate, however, is that over 50% of all cigars manufactured in the country are produced by machine.

The only information thus far released concerning the distribution of the automatic machine is the number of machines in use in 1930 by states. This information, together with the percentage production of the various states, is given on page 57.

From these figures it will be noted that about 60% of all the machines in 1930 were located in the two states Pennsylvania and New Jersey. These two states produced in that year about 48% of all the cigars manufactured in the United States and about the same proportion of the total Class A output. At the rate of 1,000,000 cigars per machine per year, the machines in use in Pennsylvania and New Jersey in 1930 had a potential capacity equal to about 85% of the total large-cigar production in the two states. Whether the volume of machine production was actually that large cannot be ascertained from the meager sources at present available, but the officials of the Cigar Makers' International Union in 1929 estimated that at least 95% of the cigars made in Pennsylvania and New Jersey were made by machines.[19] The proportion produced by machine was probably not that large, but even assuming that the machines known to be in use in Pennsylvania and New Jersey in 1930 were producing that year less than their conservatively estimated capacity, they probably produced at least three-fourths of the total output of the two

[19] *Cigar Makers' Official Journal,* January 1930, p. 7.

TABLE 8

DISTRIBUTION OF AUTOMATIC MACHINERY AND PER CENT OF TOTAL AND CLASS A PRODUCTION BY STATES

State	Number of Machines	Per Cent of Total Machines	Per Cent of 1930 Production	Per Cent of 1930 Class A Production
Pennsylvania	1,710	41.05	34.0	36
New Jersey	770	18.48	13.8	12
Missouri	364	8.73	1.7	2
Kentucky	324	7.77	1.7	2
New York	224	5.37	8.7	8
Florida	193	4.63	9.6	7
Virginia	142	3.40	5.5	8.5
Michigan	128	3.07	4.0	2
Ohio	102	2.44	6.6	*
Indiana	80	1.92	2.9	*
Massachusetts	56	1.34	1.3	*
California	22	.52	.7	*
Louisiana	20	.48	*	*
Georgia	16	.03	*	*
Minnesota	6	*	*	*
West Virginia	6	*	*	*
Iowa	2	*	*	*
Total	4,165			

* Less than one-tenth of one per cent.
Source: *Fortune*, June 1930, p. 58. The writer is informed by the International Cigar Machinery Company that these figures were compiled by the company and are correct.

states. Moreover, when it is recalled that it is around the five-cent cigar that the most intense competitive activity now centers, the significance of this machine concentration in Pennsylvania and New Jersey areas is apparent. If the machines now in use in these states were entirely devoted to Class A production they

could supply practically 70% of all the low-priced cigars consumed in the United States.

Certain other significant tendencies are indicated by the machinery distribution figures. Large numbers of machines are now being introduced into areas which have never been important producers of cigars, while other areas, always large producers, have been slow to introduce the new methods. In 1930 more machines were in use in Missouri and Kentucky than in New York and Florida, although the combined production of the latter was over five times the output of the two former states. Missouri and Kentucky had 688 machines in operation, while New York and Florida had only 417. From the production figures it is also evident that the great majority of the machines were introduced into Missouri and Kentucky during 1930 or only shortly prior to that time. The total production of Missouri jumped from 29.9 million cigars in 1929 to 97.2 million in 1930, and Class A production from 19.1 million in 1929 to 88.2 million in 1930. Production of all other classes declined between these two years. The same kind of changes occurred in Kentucky, Class A production increasing from 24.4 million in 1929 to 83.8 million in 1930.

It is unfortunate that data on the rate of machinery introduction prior to 1924 are not available. Some of the automatic machines were in use as early as 1918, an estimated number of 12 or 14, but the average rate of introduction prior to 1924 could not have exceeded 180 per year, since the number in use in June 1924 was only 1,085. For the period from 1925 to 1930 inclusive the average rate of increase has been approximately 485 machines annually. The greatest increase occurred in the year 1926 when 677 new machines were placed in operation. It is not at all strange that the year 1926 was also the year in which Class A cigar production began to take a definite and substantial lead over all cigar classes.

This rapid rise of the Class A cigar to a place of supremacy in the industry is definitely the result of the machine process. At the present rate of increase in Class A cigar production, it seems likely that this class will almost completely absorb Class B output and in a very few years dominate the total large-cigar production to the extent of over 75%. There is reason to believe that certain advantages may accrue to the industry as a whole when the present movement towards mechanization and concentra-

tion has reached its culmination, but the rapidity with which the changes have been accomplished has introduced serious maladjustments in the conditions of production and employment in the industry as a whole. If the losses and gains from the shifts in production had been distributed more equitably among the various producers, if the costs of the revolutionary new machinery had not been so high as to have constituted a virtual barrier to its employment by the smaller producers, or if machinery introduction had been a more gradual process, the readjustment might have been accomplished with less serious consequences.

CHAPTER V

FACTORS OF INSTABILITY ON THE SUPPLY SIDE: ORGANIZATION AND DEVELOPMENT OF THE INDUSTRY

I. The Concentration Movement

The introduction of machinery and improved methods of manufacture has promoted in the cigar industry a rapid development of large-scale production and industrial concentration. As long as cigars were made primarily by hand and distribution was mainly local, the industry remained largely one of small-scale operating units.

The cigar industry was the only branch of the tobacco industry over which the early Tobacco Trust was unable to obtain a considerable degree of monopoly control. According to the *Report of the Commissioner of Corporations* in 1909, the Trust was at no time able to control more than 16.4% of the annual output of large cigars as compared with an average annual output control from 1900 to 1909 of 85.3% in the cigarette industry, 90.7% in the snuff industry, and 68.7% in the smoking-tobacco branch of the industry.

An intensive effort, however, was made from 1898 to 1903 to integrate the cigar industry, because the value of the annual production of cigars at that time was over 50% greater than that of all other manufactures of tobacco combined.[1] When the American Cigar Company was organized in 1901 it almost immediately acquired control of a number of large cigar concerns and in that year the Trust produced 10.9% of the total cigar output of the country. The increases in the proportionate share of the total production controlled by the Trust for the next two years were probably due, not only to the further absorption of independent concerns, but also to extensive advertising, price-

[1] *Report of the Commissioner of Corporations,* Part I, p. 149. Washington, 1909.

cutting, and the granting of premiums.[2] The ambitious program, however, failed to accomplish the results expected, and the campaign was relaxed after 1903.

Yet, while the cigar industry escaped the early combination movements in the tobacco industry, machinery and large-scale methods have become increasingly important since the dissolution of the Trust in 1911, and industrial concentration has proceeded rapidly.

With the exception of the years 1920 and 1922, decreases in the number of cigar factories in operation January 1st have occurred every year since 1910. Reports of the Commissioner of Internal Revenue show that while there were 22,519 factories in 1910, the number in operation January 1, 1931, totaled 6,195, a decrease of over 72%. The average annual decrease since 1914 has been about 6½%, but during the past eight years the average rate has been almost 8%.

In 1910 three states, New York, Pennsylvania, and Illinois had over 50% of the total number of cigar factories, 42.7% in 1920, and 41.7% in 1930. The total number of factories in the three states declined from 11,396 in 1910 to 3,151 in 1930, or 72%.

In Table 9 the highest ranking states in number of factories are shown for 1910 and 1930. The actual and percentage changes from 1910 to 1930 reveal decreases for all; but Maryland, Michigan, Pennsylvania, Ohio, New Jersey, Missouri, and Indiana show percentage decreases above that of the country as a whole.

Meaning, however, can be given to these figures only when the percentage increases or decreases in production are considered. These production figures for the highest ranking states also appear in Table 9. Decreases in the number of factories in some states have been accompanied by decreases in production, while in others quite important increases have occurred.

In Massachusetts and Illinois the percentage decreases in factories were accompanied by more than proportionate decreases in production, while in New York, Ohio, Michigan, Wisconsin, and Maryland the percentage decreases in factories were accompanied in most cases by considerably less than proportionate decreases in production.

[2] *Ibid.*, p. 38.

TABLE 9

INCREASE OR DECREASE IN CIGAR PRODUCTION HIGHEST RANKING STATES. 1910 AND 1930

(Thousands of Large Cigars)

State	Production 1910	Production 1930	Increase (+) or Decrease (−)	% Change
Penna.	1,878,049	2,006,605	+128,555	+ 6.8
N. Y.	1,169,345	522,272	−647,073	−55.3
Ohio	651,239	388,205	−263,035	−40.4
N. J.	492,809	819,648	+326,839	+66.3
Ill.	337,349	52,431	−284,918	−84.5
Mich.	310,548	238,737	− 71,811	−23.1
Fla.	290,874	565,408	+274,534	+94.4
Va.	288,478	323,046	+ 34,568	+12.0
Mass.	179,680	78,367	−101,313	−56.4
Ind.	137,864	146,179	+ 8,316	+ 6.0
W. Va.	136,710	87,926	− 48,785	−35.8
Md.	100,711	34,655	− 66,056	−65.6
Iowa	90,972	19,271	− 71,701	−78.7
Wisc.	76,211	38,197	− 38,014	−49.8
Mo.	66,878	103,216	+ 36,337	+54.3
Ky.	63,124	101,001	+ 37,877	+60.1
Calif.	58,653	76,453	+ 17,800	+30.3

INCREASE OR DECREASE IN NUMBER OF FACTORIES HIGHEST RANKING STATES. 1910 AND 1930

State	Number of Factories in 1910	Number of Factories in 1930	Increase (+) or Decrease (−)	% Change
N. Y.	4,831	1,469	−3,362	−69.6
Penna.	4,140	937	−3,203	−77.4
Ill.	2,425	745	−1,680	−69.3
Ohio	1,695	409	−1,286	−75.9
Mich.	996	195	− 801	−80.4
Wisc.	956	396	− 560	−58.6
N. J.	656	190	− 466	−71.0
Mo.	616	167	− 449	−72.9
Ind.	605	175	− 430	−71.1
Mass.	541	346	− 195	−36.0
Calif.	497	229	− 268	−53.9
Md.	470	82	− 388	−82.6
Fla.	451	270	− 181	−40.1
Iowa	448	132	− 316	−70.5
Ky.	225	56	− 169	−75.1
W. Va.	134	32	− 102	−76.1
Va.	115	40	− 75	−65.2

Source: *Reports of the Commissioner of Internal Revenue.* Factories in Business January 1.

Among the high ranking states in number of factories in 1910, production during the twenty-year period increased as the number of factories decreased in the states of Florida, New Jersey, Missouri, California, Pennsylvania, and Indiana. In New Jersey there was a percentage decrease in factories of 71.0% accompanied by a percentage increase in production of 66.3%.

The highest ranking states in production and in number of factories are, of course, not identical. Florida, which ranked seventh in production in 1910, shows a decrease of 40.1% in number of factories and an increase in production of 94.4% for the period. Virginia ranked eighth in production; the number of factories decreased 65.2%, and the production increased by 11.9%. West Virginia shows a decline in both production and number of factories. Wisconsin, ranking sixth in number of factories in 1910, suffered a decrease in both factories and production, but Missouri and California, ranking eighth and eleventh in number of factories, while experiencing a reduction in number of factories of 73% and 54% respectively, increased in production 54.3% and 30.3% respectively. Kentucky produced in 1910 only slightly less large cigars than Missouri and considerably more than California. Production in Kentucky increased during the period 60.0% in the face of a 75.1% decrease in number of factories.

Referring again to the production table on page 62 it is evident that the production has been concentrated in a relatively small number of states. In 1910 the five chief producing states accounted for 66.5% of the total production and in 1930, for 72.7% of the total.

A number of important changes, however, have occurred with respect to the relative production position of certain areas. Pennsylvania has not only maintained its position of first rank as a producer of cigars but has increased its percentage of the total production from 27.6% in 1910 to 34.0% in 1930. New York produced 17.2% of the total large cigars in 1910 but only 8.7% in 1930; Ohio produced 9.6% of the total in 1910 and 6.6% in 1930, and Illinois' production fell from 4.9% to only about one-eighth of one per cent of the total in 1930. On the other hand, New Jersey increased its production from 7.2% in 1910 to 13.8% in 1930, and Florida, from 4.3% to 9.6%.

Thus far in the analysis of production areas the data presented have been confined to large cigars. The rapidly declining trend of small-cigar production was indicated in Chapter II. Since 1912, the first year for which Internal Revenue reports indicate the number of factories manufacturing small cigars exclusively, there have been on the average from five to seven concerns making only small cigars. Nor are there many concerns manufacturing a combination of small cigars, large cigars, and cigarettes. For example, in 1925 there were four manufacturers of small cigars exclusively, fourteen manufacturers of both large and small cigars, two of large cigars and small cigarettes, and two of small cigars and small cigarettes. In neither 1929 nor in 1930 were there any manufacturers making small cigars exclusively.

Virginia is at present the chief producing state, manufacturing in 1930 over 338 million out of a total small-cigar production for the country of slightly over 383 million. North Carolina produced 8.3% and New York 3.1% of the total output. During the period from 1910 to 1930, however, no state manifested any consistent trend in small-cigar production.

II. The Changing Regional Distribution of Cigar Production by Classes

At this point we may consider briefly the changes which have occurred in recent years with respect to the regional distribution of cigar production according to classes. This may be indicated best by reference to data compiled from 1924 to date by the Bureau of Internal Revenue for the different states.

For the purpose of this survey a selection of states was made on the basis of their importance in production. The nineteen states, the names of which appear in Table 10, produced on the average somewhat more than 90% annually of the total production for all the states during the period from 1924 to 1929.

Out of the nineteen largest producing states in the United States from 1924 to 1929, eleven experienced gains in Class A production ranging from 3% to 622%, but only six of the eleven states showed gains in total production. These six states were, in order of percentage increases in total production, Tennessee, New Jersey, Ohio, Florida, Pennsylvania, and California. Thir-

TABLE 10

CHANGES IN LARGE CIGAR PRODUCTION BY CLASSES IN SELECTED STATES
1924–1929

Increase (+) or Decrease (−) in Production as Indicated by Annual Tax-paid Withdrawals. Millions of Cigars.

State	A	B	C	D	E	Increase or Decrease in Total Production
California	+ 9.2	− 1.6	− .8	*	*	+ 8.4
Colorado	− .6	− .3	− 7.9	*	*	− 9.0
Connecticut	− 1.1	− .9	− 2.8	*	*	− 4.9
Florida	+ 98.5	− 13.6	− 15.5	+15.6	−.9	+ 94.4
Illinois	− 15.3	− 17.6	− 37.0	*	*	− 61.1
Indiana	+ 61.5	− 87.7	+ 13.3	*	*	− 13.0
Iowa	− 12.9	− 10.4	− 6.7	*	*	− 30.0
Kentucky	+ 2.0	− 3.4	− 7.9	*	*	− 9.2
Massachusetts	+ 6.9	− 14.0	− 20.6	*	*	− 27.7
Michigan	+ 18.5	− 39.7	− 29.4	− 2.1	−.1	− 38.9
Missouri	− 3.7	− 11.3	− 4.1	*	*	− 18.3
New Jersey	+259.9	− 57.9	+ 58.4	+ 9.2	−.1	+269.5
New York	− 54.2	− 2.2	−137.6	− 6.9	−.4	−201.2
Ohio	+ 49.5	−181.3	− 37.6	− .4	*	−169.7
Pennsylvania	+546.4	−316.9	+ 41.7	− 9.9	*	+261.2
Tennessee	+ 43.0	*	+ 1.0	*	*	+ 43.9
Virginia	+ 11.4	+ .4	+ 10.9	*	*	+ 21.7
West Virginia	− 6.6	*	*	*	*	− 6.6
Wisconsin	− 1.3	− 2.5	− 22.3	+ .5	*	− 25.7
Total for U. S.	+976.2	−798.4	−277.1	+15.5	−1.4	− 85.3

* Net change of less than 100,000 cigars.
Source: *Annual Reports of the Commissioner of Internal Revenue.*

teen states out of the nineteen, therefore, showed declines in total production. Tennessee, New Jersey, Pennsylvania, Florida, Massachusetts, and Indiana showed the largest percentage increases in Class A production, but from the standpoint of actual numerical increases only Pennsylvania, New Jersey, Florida, and Indiana are important. The total increase in Class A production for these four states for the period from 1924 to 1929 was over 966 million

cigars as compared with 140 million for the other seven states showing Class A increases.[3]

The decline in Class B production for the nineteen states was far greater than the declines occurring in the other classes of cigars. In only two states, Virginia and West Virginia, were there gains, and these were quite negligible. In Pennsylvania the decrease was 316.9 million cigars, in Ohio 181.3 million, in Indiana 87.7 million, and in New Jersey 57.9 million. The decline in the State of New York, which has always been a large producer of this cigar class, was only 2.2 million. The largest percentage declines among these five major producing states occurred in Indiana and Ohio, the decrease for the former being 89% and for the latter 79%.

All but five of the nineteen states suffered losses in Class C production, but three of the five showing gains, namely, Tennessee, Virginia and Indiana, are not large producers of this class of cigars. Of the four largest producing states, Pennsylvania, New Jersey, New York, and Florida, only Pennsylvania and New Jersey showed gains, 41.7 million in the case of the former and 58.4 million in the case of the latter. The production of New York declined from 324 million in 1924 to 186 million in 1929, and that of Florida declined from 267 million to 252 million. Although Michigan ranked fifth in the production of Class C cigars in 1924 and has continued to produce more of this class than any other class, the decline between 1924 and 1929 was 18%.

In the production of Classes D and E cigars, Florida has maintained her position of supremacy. Production of Class D increased from 61.5 million in 1924 to 87.1 million in 1929, or 41.8%. The production of this class constituted 66.7% of the total for the country. Class E production for the state decreased from 2.4 million in 1924 to 1.5 million in 1929, or 35%, but the total for 1929 was still 58% greater than that of her nearest competitor, New York state, which suffered a 35% decline in the production of this class cigar for the period. In 1929 these two states together produced 69% of the total for all the states of Class E cigars.

[3] The production of New York, a state which has always been a large producer of Class A cigars, declined from 340.1 million in 1924 to 285.9 million in 1929, or 16%.

III. Changes in the Size of Producing Units

The foregoing description of the distribution of cigar factories and amount of production by states reveals nothing concerning the nature and size of the individual producing units. Since 1921 the Bureau of Internal Revenue has compiled data from reports of manufacturers on the number of factories and the amount of cigar production by calendar years for factories, classified according to the amount of the annual output.

The table on the following page shows the percentages of total production and of total number of factories for these classes for the years 1921 and 1930, and also the percentage changes between 1921 and 1930 in the number of factories and the amount of production.

Small-sized factories, those with an annual output under 500,000, constituted over 90% of the total for both 1921 and 1930. The next largest class with respect to number of factories was the class producing from 500,000 to one million cigars annually. This class constituted 3.5% of the total factories in 1921 and 1.9% in 1930. The largest-sized factories, or those with an annual output exceeding 40 million, constituted less than one-tenth of one per cent of the total in 1921 and about five-tenths of one per cent in 1930. But, whereas the smallest-sized concerns were producing 13.7% of the total output in 1921 as compared to 15.7% for the largest factories, these small units were producing only 5.2% of the total in 1930 as compared with 49.8% for the largest units. Factories having an output of over ten million cigars in 1921 and producing 41.7% of the total, were in 1930 producing almost 75% of the total output. All of the classes producing less than 20 million show decreases in the actual number of factories, the greatest percentage decrease occurring in the class with an annual output of from 500,000 to one million cigars. Likewise, all of the classes producing less than 20 million show percentage decreases in production varying from 37% to 71%.

These decreases serve to emphasize the important position of the large-scale producing unit in the cigar industry today. Factories with annual output of from 20 to 40 millions increased 12% in number during the period, and their total output increased 20.9%. For factories producing over 40 million, there was an

TABLE 11

PERCENTAGE DISTRIBUTION OF CIGAR FACTORIES AND PRODUCTION FOR 1921 AND 1930

Output—Cigars	Per Cent Total Factories 1921	Per Cent Total Production 1921	Per Cent Total Factories 1930	Per Cent Total Production 1930	Per Cent Increase or Decrease—Factories	Per Cent Increase or Decrease—Production
Under 500,000	90.2	13.7	92.4	5.22	− 46.9	− 66.7
500,000 to 1 million	3.5	5.3	1.9	1.75	− 70.9	− 71.3
1– 2 million	2.2	6.8	1.5	2.80	− 64.1	− 64.3
2– 3 million	1.0	5.3	.8	2.52	− 58.5	− 58.4
3– 4 million	.52	3.9	.55	2.47	− 44.7	− 44.0
4– 5 million	.50	4.9	.33	1.91	− 65.7	− 66.0
5–10 million	1.22	18.4	.95	8.40	− 59.5	− 59.8
10–20 million	.58	16.0	.64	11.42	− 42.3	− 37.2
20–40 million	.17	10.0	.37	13.71	+ 12.0	+ 20.9
Over 40 million	.075	15.7	.46	49.80	+218.0	+177.0

Source: *Reports of the Commissioner of Internal Revenue.* Annual Totals are given in Appendices A and B.

increase of 218% in the number of firms and a percentage increase in production of over 177%. The year of greatest gain for the class last mentioned was 1927, when the increase was 33.5%.

It should be noted, however, that while the factories in the class with an annual output of from 20 to 40 million cigars produced but 13.7% of the total output in 1930, these factories nevertheless were producing 16% on the average between 1922 and 1928. Likewise, the class with an output of from 10 to 20 million, while producing only 11.4% of the total output in 1930, was, between 1922 and 1929, producing on the average about 16% of the total output. In other words, a close scrutiny of the production figures shows that the huge gains made in the last four or five years by factories producing over 40 million cigars have not been made at the expense of the smaller producing units, but at the expense of those two or three classes with very large output.

If, however, the total production of the various classes is put upon a per-factory basis for the years 1921 and 1930, the class of smallest-sized factories shows a decrease of 26 million cigars per factory, or 37.1%. The only other significant decrease is the 12.7% decrease for the class of the largest-sized factories, but it must be remembered that during this period there was a 218% increase in the number, of firms and a 177% increase in production, the largest increases of any of the classes.

IV. The Growth of the Major Corporations

It is estimated by the United States Department of Commerce that twelve of the largest cigar manufacturing companies in the United States at present produce about 65% of the nation's cigar output. The production figures upon which this estimate is based are not available, but annual production figures for four or five of the largest producers have been made public for the past few years. In 1929 the approximated total production for four large corporations, Bayuk Cigars, Inc., The Consolidated Cigar Corporation, The Congress Cigar Company, and the General Cigar Corporation, was 1,833 million cigars, or more than 28% of the total large cigars manufactured in the country during that year. The production of the General Cigar Company alone was said

to be in excess of 880 million cigars,[4] or slightly more than 13% of the total national production.

The General Cigar Company, now the largest producer of cigars, was incorporated in 1906 as the United Cigar Manufacturing Company. The growth of the company has been rapid, especially since 1922, at which time machine methods of manufacture were adopted. According to recent reports of the Standard Statistics Company, over 80% of the company's manufacturing facilities have been mechanized. During 1928 the company placed in operation a new, modern plant at Binghamton, New York, which in the following year attained a production rate of 75,000,000 cigars per annum. The original seventy-seven factories and stripping plants have been gradually reduced to twenty-one plants although the capacity has greatly increased. These manufacturing plants, together with sixty-eight leaf-tobacco warehouses, are located in fifty-six cities situated in the states of New York, New Jersey, Pennsylvania, Connecticut, Ohio, Indiana, Massachusetts, Michigan, and Wisconsin. The company has developed its own jobbing business which is conducted through some 148 distributing branches located in twenty-four states. The total reported value of the assets as of December 31, 1929, was $36,533,913. The company has a well-intrenched position in the five-cent field through the production of two important cigar brands, the "White Owl" and the "William Penn." In the medium-priced field it is represented by the popular "Robt. Burns" cigar.

The development of the Porto Rican-American Tobacco Company presents another outstanding example of the recent tendency toward combination and large-scale operation in the cigar industry. This company, owning important manufacturing plants in Puerto Rico having a combined annual capacity of over 150,000,000 cigars and 400,000,000 cigarettes, acquired control of the Congress Cigar Company in 1927 and of Waitt and Bond, Inc., in 1929. The Congress Cigar Company, the chief source of earnings for the Porto Rican-American Tobacco Company, is one of the well-known American producing concerns, having been established in 1896 under the name of Samuel Paley and Company. The chief product of the company is the cigar sold under the trade name "La Palina." Plants of the company are located in several

[4] Standard Statistics Company, Inc., *Stock Records.*

states, but in recent years the great majority of the production has been concentrated in the two large plants in Philadelphia, Pa. and Camden, N. J., the daily capacity of which is about 1,300,000 cigars. These plants are of modern design and machine equipped. Annual production for all plants increased from 99.6 million cigars in 1922 to 274.1 million in 1927. Since 1927 the production has declined, due to the fact that the company has no brand with which to meet the competition in the low-priced field.

The most recent acquisition of the Porto Rican-American Tobacco Company, Waitt and Bond, Inc., is another of America's famous old cigar concerns. Established in 1870, this company has mainly concentrated on a medium-priced quality cigar, the "Blackstone." Prior to 1919 the company manufactured its product in Boston by the hand method but, due to labor difficulties, a new machine-equipped factory was erected in Newark, with a production capacity of between 125 million and 150 million cigars annually.

The Consolidated Cigar Corporation is another of the great modern cigar companies which has attained its present status largely through acquiring control of smaller manufacturing units. It was incorporated in 1919 to acquire six important cigar concerns in New York, Florida, and Michigan. Within two years it had acquired the factories of the G. J. Johnson Cigar Company in Michigan and those of the 44 Cigar Company. The latter company was established in 1893 in Philadelphia and at the time of the acquisition by the Consolidated Cigar Corporation had eight factories in various parts of Pennsylvania and New Jersey with an annual capacity of about 100,000,000 cigars.[5]

In 1926 the Consolidated acquired all of the common stock of the G. H. P. Cigar Company at a price in excess of $8,500,000. The G. H. P. Cigar Company, under the management of B. L. Grabosky, became one of the leading producers in the East. Until the acquisition by the Consolidated in 1926 all cigars of the G. H. P. Cigar Company were made by hand. The reputation of the company as a maker of quality cigars was built up around one brand, the "El Producto." Under new management machinery was rapidly introduced into the plants of the G. H. P. Cigar Company as well as most of the others of the parent com-

[5] Moody, *Manual of Investments.*

pany, so that at present from 80 to 85% of the output is produced by machinery.

The Consolidated Cigar Corporation has concentrated mainly on medium-priced cigars such as "El Producto," "Dutch Masters," "Harvester," and others, although the five-cent field has been entered with the brands "New Bachelor" and "Henry George." It was estimated that in 1931 the company manufactured about one-fourth of all the Class C cigars made in the United States.[6] The company uses a large amount of domestic shade-grown cigar wrapper, most of which it obtains from its own leased properties in the Connecticut Valley. The total annual production of the company for the last six years has averaged about 426 million cigars.

Another company with a long and successful cigar manufacturing record is Bayuk Cigars, Incorporated. The original Bayuk business was established in 1897 as a copartnership; the present company was incorporated in 1920. Unlike the companies mentioned above, Bayuk's growth and expansion has not been attained through the acquisition or control of other important producing units. However, the annual production has increased from 87 million cigars in 1916 to approximately 300 million in 1929. Production is mainly concentrated on the medium-priced "Bayuk Phillies" and on the low-priced "Havana Ribbon." This company was among the first to introduce the automatic machine on a large scale. Three of the six cigar manufacturing plants are located in Philadelphia and one each in Newark, Perth Amboy, and Trenton.

The American Cigar Company, closely controlled by the American Tobacco Company, has always been a large producer of cigars, but during the past few years it has turned aggressively to concentration on the manufacture, advertising, and sale of a single product, the five-cent "Cremo" cigar. Small plants have been discontinued and manufacturing concentrated in a few large modern, machine-equipped factories. In 1929 a new factory costing approximately $3,000,000 was opened in Kansas City, Missouri. This plant has a daily capacity of approximately 2,000,000 cigars. Through the control of the Cuban Tobacco Company, the American Cigar Company has attained control over a number

[6] *Standard Corporation Records,* Standard Statistics Company, Inc.

of important brands in the high-priced cigar field, including among others the well-known "La Corona."

The preceding account by no means fully completes the history of the concentration movement among individual cigar manufacturing concerns, but serves merely to illustrate the nature and extent of the movement. Some measurement of the part played by the profit motive in the industry would doubtless contribute to a more adequate understanding of the forces responsible for the rapid mechanization, large-scale production, and industrial concentration, but adequate and satisfactory data for such an analysis are not available even for the limited number of large corporate organizations mentioned above.

In summary it may be emphasized that especially since the introduction of machinery into the cigar industry, large-scale operation and industrial concentration have developed at an increasingly rapid pace. Once a type of manufacturing industry rather widely scattered over the country, a hand industry which could be operated on a profitable basis even by the "buckeye," it now seems to be fast approaching the stage in which the small units will be almost entirely eliminated and the production centered in the hands of a few huge corporations, probably less than ten or twelve in number. This rapidly progressing concentration movement and shifting geographical distribution of the industry have been of important and far-reaching consequence as factors of instability in the field of production, and have created especially acute and distressing labor problems.

CHAPTER VI

THE EFFECT OF TECHNOLOGICAL CHANGES UPON EMPLOYMENT IN THE CIGAR INDUSTRY

I. Displacement of Skilled Workers

The technological changes in the methods of cigar making were outlined in Chapter IV. Hand manufacture, especially in its modified form, the teamwork system, still persists but, as already noted, the automatic machine is rapidly attaining a position of supremacy in the industry. This shift to machinery has been attended with important changes in the general employment situation. Skilled labor has been supplanted by unskilled, male workers by female workers, and high wage scales by lower scales. This movement must, therefore, be considered as an important factor of instability.

No comprehensive data for any considerable period are available for the purpose of indicating the relative proportions of skilled and unskilled workers in the industry. Something of the general nature of this changing situation may, however, be indicated by reference to figures compiled by the Cigar Makers' International Union from the returns of local union questionnaires, the results of which have been presented at certain of the national conventions.[1]

According to these reports, there were 17,346 workers in 1920, union and non-union, engaged in handwork, or 16% of all cigar makers employed.[2] Workers employed on the mould system constituted about 16% of the total, while 71,194 workers, about 67% of the total, were employed under the teamwork system. Included in this number were 11,469, or 9% of the total, who were on suction teamwork.

[1] The published reports appear in the *Cigar Makers' Official Journal.*

[2] This report covered 111,378 workers. *The United States Census* for 1920 indicated a total of 114,299 workers.

In 1923 the reports covered 90,180 cigar makers, 13,305 or 15% of whom were employed at handwork, 29,323 or 32%, at mouldwork, and 47,552 or 52%, at teamwork. Fifteen per cent of the total workers in 1923, as compared with 9% in 1920, were employed on suction-table work. This report also indicated 1,928 workers employed on the new automatic machines. In 1925, 7,817 workers, or 10% of a total of 78,941 covered by the reports, were engaged in handwork, 9,508, or 12%, at mouldwork and 61,616, or 78%, were employed under the teamwork system. Thus, while the workers employed at handwork decreased from 16% in 1920 to 10% in 1925, mould workers employed in the teamwork system and aided by machinery increased from 67% in 1920 to over 78% of the total workers in 1925. The number of workers employed on the automatic machines increased from 1,928 in 1923 to 3,528 in 1925, or 85%. These figures for handwork and teamwork employment are probably quite accurate and fairly comprehensive, but the figures for machine workers probably do not accurately indicate the actual totals for the entire country.

The United States Bureau of Labor Statistics has recently attempted to estimate the labor displacement occasioned by the use of automatic machinery.[3] These figures are reproduced in Table 12. In addition to the column in the original table showing the cumulative yearly totals of displaced workers, figures have been compiled to indicate more clearly the number of additional workers displaced each year.

These estimates of the Bureau of Labor Statistics are based upon the average of what the machines actually produced in certain typical plants rather than on the potential rated capacity of the machines. In arriving at these figures consideration was given to the following factors: (1) "The fact that the cigar business is a seasonal one and many of the machines are not in operation the entire year; (2) the fact that the production on these machines is dependent to a large extent on the experience of the operators; and (3) loss of time due to breakdowns and the repairing of the machines."[4]

In making the estimate of the number of hand workers re-

[3] *Monthly Labor Review,* United States Department of Labor, December 1931, pp. 11-17.

[4] *Ibid.,* p. 13.

TABLE 12

ESTIMATED NUMBER OF HAND WORKERS DISPLACED BY CIGAR MACHINERY, 1917–1931

Year	Estimated Machine Production (Cigars)	Estimated Number of Machine Employees Required	Estimated Number of Hand Workers Required for Same Production	Estimated Number of Employees Displaced	Number of Additional Workers Displaced Each Year
1917.....	1,500,000	9	20	11	
1918.....	9,000,000	54	120	66	55
1919.....	181,500,000	1,089	2,420	1,331	1,265
1920.....	371,250,000	2,228	4,950	2,732	1,401
1921.....	401,250,000	2,408	5,350	2,942	210
1922.....	477,750,000	2,867	6,370	3,503	561
1923.....	632,250,000	3,794	8,430	4,636	1,133
1924.....	718,500,000	4,311	9,850	5,539	903
1925.....	956,800,000	5,742	12,757	7,015	1,476
1926.....	1,446,750,000	8,681	19,290	10,609	3,594
1927.....	1,824,750,000	10,949	24,330	13,381	2,772
1928.....	2,040,000,000	12,240	27,200	14,960	1,579
1929.....	2,290,500,000	13,743	30,540	16,797	1,837
1930.....	2,768,250,000	16,610	36,910	20,300	3,503
1931.....	2,912,250,000	17,474	38,830	21,356	1,056

Source: *Monthly Labor Review*, December 1931, p. 13.

quired for the same production as that estimated for the machines it was necessary to take into consideration the fact that production per employee varies according to whether the teamwork system or the straight handwork system is employed, and also the fact that production varies in different factories according to the size and shape of the cigar manufactured, the quality of the workmanship required, condition of the tobacco, and individual differences in the productive ability of the workers.

Since other estimates indicate that 50% or more of the annual cigar output is made by machinery, the estimates of the Bureau

appear to be quite conservative. At any rate, in view of the fact that the trend of cigar production has been downward since 1920, the rate and extent of displacement revealed by the figures brings into striking relief the instability of employment introduced as a result of the mechanization of the industry. Furthermore, it will be noted that the displacement of workers has proceeded rapidly since 1926, two-thirds of the total displacement for the period having occurred in the last six years.

II. The Decline in Union Membership

The cigar industry, an industry difficult to unionize even before the introduction of automatic machinery, now presents an almost hopeless problem to the most determined organizers. The official journals of the Cigar Makers' International Union are replete with illustrations of union organization difficulties. As will be explained later, the union persistently and for too long opposed the admission of unskilled workers into its ranks. Since only the larger manufacturing concerns could afford the introduction of machinery and therefore employed most of the unskilled labor, the efforts of the union were largely concentrated on the smaller concerns using mainly hand methods. As these "trust" shops, so-called by the union laborers, became more and more firmly entrenched and less dependent upon skilled labor, they have been able to frustrate the more recent attempts of the union to organize their unskilled workers. Union membership, as reported to the American Federation of Labor, grew rapidly from about 37,000 in 1900 to a peak of over 51,000 in 1909 and 1910, but since then has gradually declined, totaling about 39,000 in 1920 and only 26,649 in 1925.[5]

The union's failure to keep the trade adequately organized, especially during the period since the War, is more apparent when union membership is contrasted with the number of non-union workers. A compilation of the union figures is presented in Table 13.

According to these figures, 40,737 cigar makers, or 37% out of a total of 111,378 in 1920, were members of the union. In 1925 only 16,649 workers, or 21% of the total, were members

[5] The figure for 1925 is that obtained from the union survey, presented as a convention report.

TABLE 13

DISTRIBUTION OF UNION AND NON-UNION MEN AND WOMEN IN THE CIGAR INDUSTRY

Year	Total Number of Union and Non-union Men	Percentage of Total Workers	Total Number of Union and Non-union Women	Percentage of Total Workers	Total of All Workers
1912	65,835	61	41,956	38	107,791
1920	50,375	45	61,003	54	111,378
1923	38,927	43	51,253	56	90,180
1925	28,293	35	50,648	64	78,941

Year	Total Union Workers	Percentage of Total Workers	Total Non-union Workers	Percentage of Total Workers	Total of All Workers
1920	40,737	37	70,641	63	111,378
1923	23,155	26	67,025	74	90,180
1925	16,649	21	62,292	79	78,941

Year	Union Men	% of Total Men	Non-union Men	% of Total Men	Union Women	% of Total Women	Non-union Women	% of Total Women
1920	33,699	66	16,676	34	7,038	11	53,965	89
1923	19,798	51	19,129	49	3,357	6	47,896	94
1925	13,463	45	14,830	54	3,185	6	47,462	94

Source: *Cigar Makers' Official Journal.*

of the union. The non-union proportion of the total number of workers, therefore, increased from 63% in 1920 to 79% in 1925. Still more significant is the fact that between 1920 and 1925 the number of union men decreased 60%, while non-union men decreased only 10%. Especially difficult has been the task of organizing the women and girls, only about 6% of whom were members of the union in 1925. This is particularly significant in view of the fact that while the number of men in the industry is steadily decreasing, the number of women cigar makers increased from 41,956 in 1912 to 50,648 in 1925. During the same period the number of male workers decreased from 65,835 to 28,293, or 57%. Male workers constituted 61% of the total cigar makers in 1912; female workers, 38%. By 1925, these proportions had been almost exactly reversed, women constituting over 64% of the total workers and men only 35% of that total. Almost 94% of the women workers were still unorganized in 1925, as compared with 54% of non-union men.

According to the union reports in 1923, 35,747 women, or 69% of all women workers and 74% of all non-union women, were employed in 186 "trust" or "chain" shops. These shops employed only 8,546 men out of a total of 38,927 male cigar makers. The division of union and non-union workers among the different methods of cigar making is also instructive. In 1925, of the 11,413 men engaged in hand and mould work, 59% were unionized, while only about 23% of the women performing this type of work were union members. While 13% of the men rolling bunches by the suction table method were union members, there were only 167 women members of the union out of a total of 24,303 women performing this type of work. This same year, while 157 men were working on the automatic machine, only 3 of whom were union men, there were 3,371 women so employed, none of whom belonged to the union.

III. Declining Wage Scales

Although it is a fact everywhere observed in the cigar industry that wage scales since the introduction of machinery have been steadily downward, no comprehensive analysis of the situation has in recent years been undertaken. The United States Bureau of Labor Statistics did, however, in 1927 ask the Cigar Makers'

International Union to submit an estimate of the average rates paid to union cigar makers for different types of work. These estimates, together with estimates of the average number of cigars made per eight-hour day, are reproduced in Table 14.

TABLE 14

UNION WAGE SCALES IN THE CIGAR INDUSTRY, 1927

Kind of Work	Kind of Tobacco Used	Average Rate per Thousand	Average No. Cigars per 8-hour Day
Hand work	Seed	$14.90	275
	Seed and Havana	18.15	250
	Clear Havana	21.20	200
Mould work	Seed	13.10	325
	Seed and Havana	17.18	300
	Clear Havana	18.22	225
Machine work	Seed	8.75	*
	Seed and Havana	12.50	*

* No accurate information available.
Source: *Union Scale of Wages and Hours of Labor, 1927–8.* United States Bureau of Labor Statistics, Bulletin No. 476.

Seed cigars are cigars made entirely of American-grown tobacco, the Seed and Havana are those made of American tobacco mixed with Havana filler and usually covered with shade-grown wrappers, or with Sumatra wrappers. Clear Havana cigars, as the name indicates, are those made entirely of Cuban tobacco. In 1927-28 Seed cigars were made by machine at a wage rate some 70% less than the rate paid to the average union hand worker. The significance of this wage situation is even more striking when it is recalled that most of the machine products are made by non-union workers. Just how much lower average non-union wages are than union wages for machine work cannot be determined, but according to the survey made by the union in 1925, non-union hand and mould work rates for Seed cigars were

on the average considerably lower than rates paid to union workers covered by the survey.[6]

During the current depression, wage scales in non-union shops have declined to ridiculously low points. In fact they are so low that in many sections, manufacturers using the hand method are said to be enjoying a margin of advantage over the highly mechanized shops. On a visit recently to the factory of George Zifferblatt, owner of the largest non-mechanized shop in the Philadelphia area and maker of the well-known "Habanello" brand of cigar, the writer found every bench occupied and production at about capacity. Mr. Zifferblatt reported an early fall production for 1932 of 110,000 cigars per day as compared with 90,000 a day for the same season of 1931.

While this low wage situation inures to the advantage of the producer, it injects even greater difficulty into the labor situation. Advantage in certain quarters is being taken of the general unemployment situation to force wages, especially for handwork, to extremely low levels. For example, in the summer of 1932 a school dedicated to instruction in cigar making was opened in Red Lion, Pennsylvania, a cheap cigar manufacturing district. The school was opened under the auspices of David Horn and J. C. Winter, cigar manufacturers of the district. Students are taught to break or roll bunches but not the making of the cigar complete. The labor union claims that no dearth of labor exists in this region and from all that can be learned this appears to be the situation. If so, the movement to train additional laborers will result in the creation of a surplus labor supply and tend to drive wages to still lower levels.

IV. The Union Fight against the Machine

A strongly organized, forward-looking labor union might have been a powerful aid in minimizing the fluctuations in employment occurring in the cigar industry since the introduction of machine

[6] Lowest-priced union handwork averaged $13.44 per thousand, non-union, $8.63; lowest-priced union mould work averaged $11.25 and non-union, $7.10; highest-priced union handwork averaged $18.21 and non-union, $16.31; highest-priced union mould work, $18.23 and non-union, $10.71 per thousand. *Cigar Makers' Official Journal,* September 1925, p. 27.

methods, but the Cigar Makers' International Union, as we have seen, has lost rather than gained in numbers and strength.

This decline in power and influence was, however, only in part due to factors, control over which might have been exercised by the union itself. As machine methods of cigar manufacturing were successfully developed, they were warmly welcomed by non-union manufacturers who were thereby enabled to hire unskilled labor at much lower rates than were enforced in the union shops. The competition of these non-union, machine-equipped shops was intense, and union manufacturers found themselves in a disadvantageous position.

On the other hand, the union wasted its efforts in a fruitless attempt to check the introduction of labor-saving devices in cigar making, and lost any possible opportunity for exercising an important controlling influence over the now dominant method of production.

Before the introduction of machine methods, the Cigar Makers' International Union occupied a position of power in the industry and functioned with considerable effectiveness. It is one of the oldest labor organizations in the country, and has served as a model for many others. A local organization existed in Cincinnati as early as 1841, and a convention of state locals was held in New York state in 1854. The national organization was formed in New York in 1864.[7]

The first efforts of the union were devoted to the securing of uniform apprenticeship rules and journeyman regulations. The next work was the provision for voluntary strike contributions. Sickness and death benefits were introduced in 1880, and out-of-work benefits in 1889. The sickness benefits, however, were abolished in 1927 due to lack of funds from which to continue payments. The problem of wages and working conditions were left to local unions, except in the matter of hours of work and the minimum term of apprenticeship. The eight-hour day was adopted by the national in 1886 and a uniform apprenticeship period of three years established. Legislation by popular initia-

[7] For the early history of the organization, consult Adolph Strasser's sketch in *The Labor Movement*, edited by George E. McNeill (A. M. Bridgman & Co., Boston, 1887), Appendix, pp. 585-95. Also "The Structure of Cigar Maker's Union," by T. A. Glocker in Hollander and Barnett, *Studies in American Trade Unionism* (Henry Holt & Co., 1912), Chap. III.

tive and referendum has been predominant and conventions are held but seldom.

Not until about 1925 was the union willing to accept the fact that machinery and machine methods in cigar making had come to stay. No extended account of the many and vigorous attempts to impose restrictions upon machine processes need be given. The opposition runs back to the very first labor-saving device introduced, the mould. Strikes occurred in several localities as a result of its employment. This opposition was not limited merely to mechanical appliances used directly in the making of cigars. One of the most prolonged and severe strikes occurred in the Tampa region in 1918-19 because of the introduction of cigar leaf stripping machines. Not only the hand strippers went out on the strike, but even the cigar makers engaged at the same time in a sympathetic strike.

An important phase of this opposition to machinery relates to the employment of women in cigar making. Women were not at first admitted to union membership, and after it was seen that manufacturers were utilizing this cheaper, unskilled type of labor to break strikes and to work at machine tasks, there developed an even greater tendency to deny membership to them. But the number of women workers increased so rapidly that, in 1881, the president of the union advised their recognition, arguing that they could cause untold damage outside the ranks as tools used in the hands of employers to break the union.

The opposition to machinery, however, continued to find expression until about 1912, when the union was forced to admit officially the seriousness of the inroads being made upon hand workers by the mould- and team-work systems. Serious attempts were then made to unionize all of these workers. Still, it was claimed by union leaders even as late as 1920 that cigars made with the aid of machinery were inferior to those made by hand, and the rapid trend to machinery attributed to the greed of manufacturers.[8]

Five years later, however, the president of the International Union, Mr. G. W. Perkins, addressed the representatives of the organization as follows:

[8] Annual Convention of the Cigar Makers' International Union, Cleveland, April 1920. Address of President G. W. Perkins, *Cigar Makers' Official Journal,* March 15, 1920, pp. 2-17.

Many delegates here during this session have said many things as to the reason why the trade is not organized. Many of these things mentioned are not the real cause. Many local unions have made no attempt, but, on the contrary, have held aloof from cigar machinery despite the fact that the machine has overtaken and will remain with us. If it were the last thing I ever said in a convention of cigar makers I would say, as I have said for many years, keep in step with the evolution of the industry. . . .

We must recognize the machine and make an effort to organize the women and others employed on such machines if we hope to be entirely successful. . . .

I have never said, and I do not now say, that union cigar makers should do anything in connection with machinery that would decrease their earning power; but I have said, and I say it now, that if in the negotiation for bills of prices in places where machinery is employed, we cannot adopt a bill of prices that will maintain or increase the earning power of the cigar makers we ought not to make any such bill of prices. If a machine that makes the cigar in part, either the bunch or rolling it up, is successful and we recognize it and make a bill for it, it cheapens the cost of production of the cigar to the manufacturer, but doesn't decrease the amount of wages the makers receive. No one has ever advocated, so far as I know, that wages should be decreased through the use of machinery; on the contrary, as I have always said, they must be increased, for the great army of unorganized cigar makers as well as many of the organized cigar makers do not receive wages sufficient to keep them in common decency.[9]

Thus was the machine definitely recognized, but too late, judged by the progress made since that time, for an already enfeebled union organization to exert any constructive or far-reaching influence upon the industry. However, it is well to remember, as was pointed out above, that many of the factors so adversely affecting labor in the cigar industry are factors which are almost entirely beyond the reach and control of union policy. While something might have been gained had the union at an early date made a serious attempt to unionize the machine factories and to place some proportion of the skilled laborers at machine tasks, it could not, of course, cope with the general problem of the rapid displacement of skilled labor. The union might have assumed a more conciliatory attitude toward large-scale mechanized industry, but it could not have solved the problems of fierce competitive activity engendered by technological change.

[9] *Cigar Makers' Official Journal*, September 1925, p. 132.

V. Recent Union Activities and Possible Stabilizing Influences

Efforts toward further union organization, however, have not been relaxed. Even for the large mechanized non-union shops where the task of organization seems an almost insuperable task, union leaders optimistically hope ultimately to effect union scales of wages and working conditions. Mr. I. M. Ornburn, the energetic and able president of the International Union, expressed this hope in his presidential address at Chicago in 1927. He said, in part, "I hope to see the day soon when day-rate pay will be the rule in machine work production. I moreover expect to realize and see in full force a universal scale of prices at day-rate pay for all machine workers."[10]

Recognizing the disadvantageous competitive position of the union cigar manufacturers using the hand processes, union leaders have for some time been urging the local unions to establish more favorable union wage rates for the five-cent cigars made in shops whose owners wish to compete in the low-priced field. The International Executive Board, finally, on September 12, 1932, unanimously concurred in the following resolution with respect to this matter:

> Where local unions refuse to adjust their Class A bills of prices in conformity with necessity and when in the judgment of a majority of the International Executive Board such adjustments are deemed necessary to serve the best interests of the union cigar industry the International Executive Board may institute Class A bills of prices, the same to be binding upon the local union and the manufacturer alike.[11]

One other recent union movement, which seems to have within it the possibility of exerting a beneficial stabilizing influence in the industry, needs some explanation. While union leaders, as was noted above, have from time to time expressed the optimistic hope that even the largest non-union shops might be ultimately organized, they nevertheless have realized that their interests are very closely bound up with the interests of the smaller pro-

[10] *Cigar Makers' Official Journal,* August 1927, p. 12.
[11] *Ibid.,* October 1932, p. 9.

ducers. At the International Convention at Boston in 1925, President G. W. Perkins declared:

> In the cigar and tobacco industry I see no immediate or permanent hope for independent, medium-sized firms except through organizations and coöperation with the union. If the independent union manufacturers will combine, if only for buying raw material and a better control of selling prices, they will find it helpful to themselves.[12]

At the same convention the International Union passed a resolution authorizing the President and the Executive Board to "investigate the feasibility of obtaining a copyright label to be used nationally by manufacturers who will subscribe to rules to be made by the International Union to encourage coöperative buying of leaf through a central bureau for the purpose of standardizing quality."[13]

In June 1932 the International Executive Board had completed its inquiry. It was decided that the "Sam Gompers" label should be used as the universal brand. Title was secured from the heirs of the Gompers estate, and a design agreed upon and ordered from the lithographers. It was agreed that the five-cent cigars would be a blend of Zimmers and Pennsylvania filler combined with a Connecticut binder and shade wrapper. This cigar, it is claimed, is far superior to the widely advertised non-union brands which are now so completely dominating the five-cent market.

Three months after these plans had been worked out, Mr. A. P. Bower, Secretary of the Cigar Makers' Coöperative Association, reported[14] orders from twenty manufacturers to whom stock had been shipped, and fifteen more orders for which stock was being prepared for shipment. Other inquiries indicated that probably one hundred manufacturers would be using the brand by the middle of November. These orders included the necessary tobacco, boxes, labels, cellophane, and advertising matter. It was reported also that definite progress was being made toward providing manufacturers in the Association with material for a "Sam Gompers" ten-cent cigar, a product which is to contain quality Havana filler with a Connecticut binder and a Sumatra wrapper.

[12] *Cigar Makers' Official Journal,* September 1925, p. 20.
[13] *Ibid.,* p. 66.
[14] *Ibid.,* October 1932, p. 9.

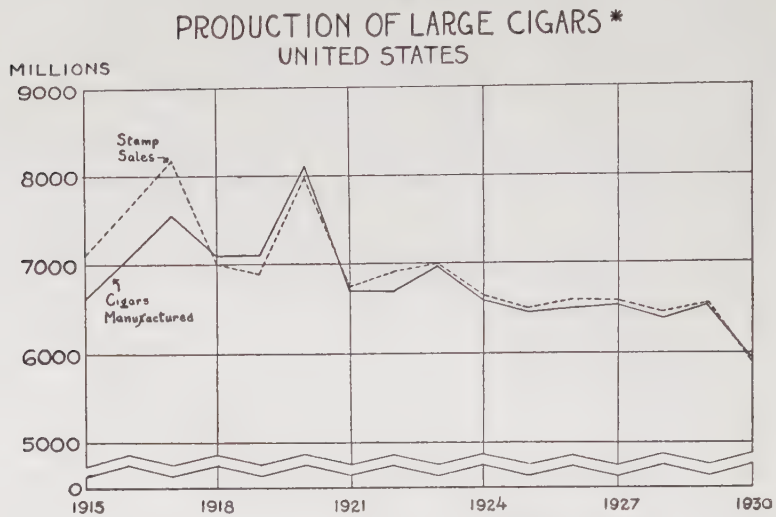
CHAPTER VII

SEASONAL FACTORS OF INSTABILITY

All branches of the tobacco industry are subject to seasonal variations in production and employment, but this factor of instability is more pronounced in cigar manufacturing than in any other branch of the industry. On first thought one might be inclined to attribute the seasonality to the fact that the source of supply is an agricultural product. The real source of this instability, however, is found in habits of final consumption. Tobacco is not ready for manufacture when harvesting is complete. It requires considerable attention from the time it is harvested until it is ready for use in the manufacture of cigars. The skill and care required in the various intermediate stages of cigar leaf curing, processing, and aging were discussed at some length in Chapter IV. The time consumed in these stages is from one to three years. Considerable stocks of processed tobacco leaf are at all times throughout the year in readiness for manufacture. The nature of the raw material supply does not, therefore, account for the extreme seasonal fluctuations in cigar production.

Unfortunately, monthly figures of actual cigar production are not available either for the country as a whole or for states or internal revenue districts. Figures for cigar withdrawals as represented by the sale of stamps by the various internal revenue offices are, however, available monthly. These data have been compiled monthly and released to the trade since 1911. When the annual totals of these monthly figures are compared with the number of cigars manufactured as indicated by the annual reports of the Bureau of Internal Revenue, there is revealed a sufficiently close correspondence to warrant the use of stamp sales as a measure of production. The totals for these two items have been plotted for the years 1915 to 1930 in Chart VII. The rather wide difference between the two curves in 1915-16-17 is due to the fact that production in bonded manufacturing warehouses bulked

Chart VII



*Production as based upon: 1. Revenue Stamp Sales; 2. Cigars actually manufactured
Source: Reports of the Bureau of Internal Revenue

larger in those years than in any of the subsequent years. Under our tariff act (Title III, section 311) provision is made for the establishment of bonded warehouses for the manufacture of cigars wholly from tobacco imported from any one country and for the withdrawal of such cigars for home consumption on the payment of the duty on such tobacco and the payment of the internal revenue tax accruing on such cigars in the condition as withdrawn. These warehouses are wholly under customs supervision and their production is not included in the internal revenue accounts. On the other hand, these bonded concerns purchase their revenue stamps from the revenue agents in their district, and these sales are included with the domestic sales of stamps.

In all years, therefore, except 1918-19-20, the production as indicated by the sale of stamps slightly exceeds the domestic production. The excess of production over stamp sales in the war years is due to the fact that liberal exportations for the use of our expeditionary forces were made during that period.

It appears that the annual movement of production in the cigar industry may be fairly well represented by revenue withdrawal data, but this does not settle the question whether the monthly data may be used to indicate the seasonal movement in production.

It might be contended that such monthly figures are likely to be inaccurate measures of the month-to-month production, or at least to display a certain varying lag. To check on the general practice of manufacturers with regard to stamp purchases, the writer addressed the various district revenue agents in charge of stamp sales. The replies, almost without exception, indicate that, in so far as the revenue agents are able to determine, cigar manufacturers do not produce heavily for stock; that they purchase stamps mainly for current needs; and that, therefore, the monthly stamp sales constitute a fairly accurate index of the volume of production.

Mr. R. H. Roberts, of the Tobacco Division, First Internal Revenue District of Pennsylvania, volunteered to make a partial check in his district. The monthly production of eighteen of the largest cigar factories in the Philadelphia district was obtained for the six months period from January 1 to June 30, 1932. These figures, when compared with the stamp sales for the same months, showed an almost exact correspondence, the percentage difference being negligible.

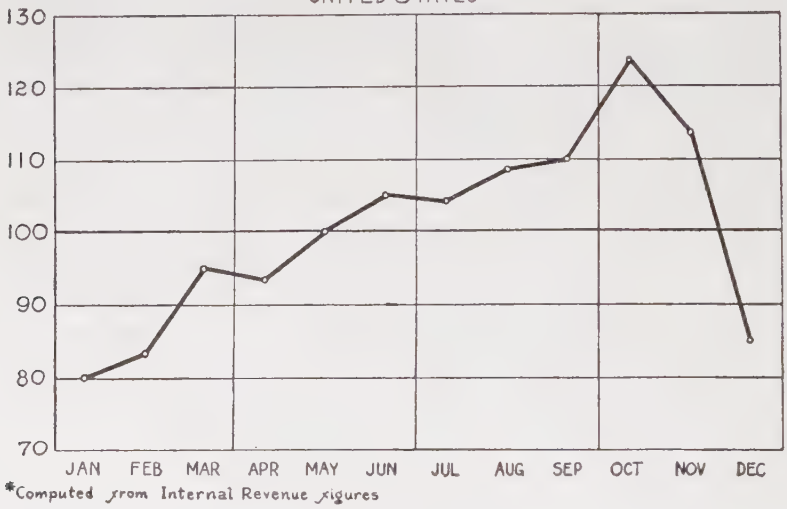
Still another check upon the question of the validity of the use of these stamp figures as current production indices may be noted. Recently the Federal Reserve Bank in Philadelphia decided to run an index of cigar production for the third district, and in line with their usual method they were obliged to obtain monthly production figures back to 1923. Unable to obtain the requisite coöperation from the reporting firms, a clerical force was set to work at the Philadelphia office of the Internal Revenue Department for the purpose of compiling the actual production figures from the manufacturers' records. This was such a laborious and expensive process that Mr. C. A. Sienkiewicz, who is in charge of the statistical analysis, decided to check up on the feasibility of utilizing stamp sales instead of actual production figures. This was accomplished through the coöperation of the Washington office of the Internal Revenue Department,[1] and it was found that for the period surveyed the differences between monthly stamp sales and actual production were quite insignificant. Stamp sales were therefore adopted by the bank for the purpose of indicating current changes in production.

[1] The Third Federal Revenue District includes certain areas outside the First Pennsylvania Internal Revenue District.

The seasonal index numbers for large-cigar production for the period 1918 to 1931 have been plotted on Chart VIII. This particular period was selected in order to make comparisons with the seasonal movements in the various classes of cigars, monthly data for which are available only from 1918 to date. The moving average method of computation was used because this method is used later in this study for the purpose of the cyclical analysis. The results, in any case, are almost exactly the same regardless

Chart VIII

PRODUCTION OF LARGE CIGARS
SEASONAL INDEX, 1918-31*
UNITED STATES



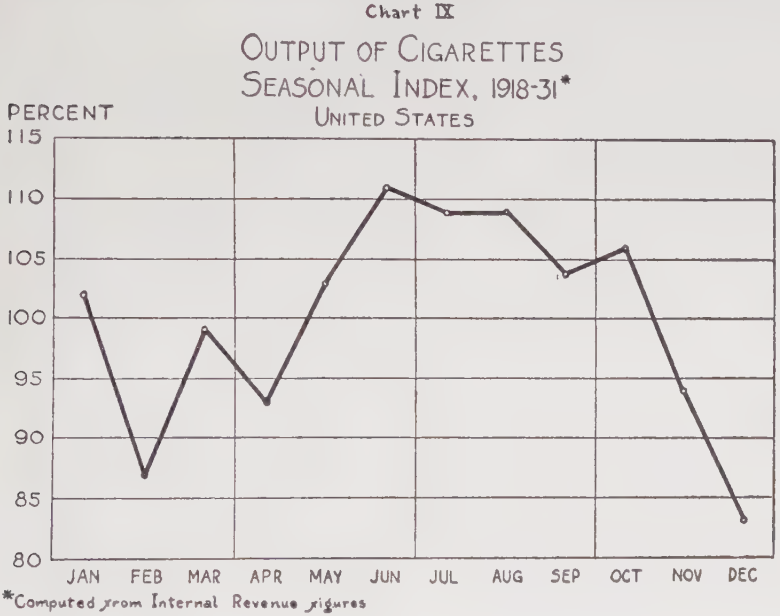
*Computed from Internal Revenue figures

of the method used. The indexes of seasonality, computed by three different methods, for large cigars for the period 1921-1929 have been tabulated in Appendix D.

The seasonal pattern for cigars is characterized by peaks of production in October and November and low points in December, January, and February. This rapid expansion of production in the late summer and fall, and the abrupt decline in activity in the winter months is due to seasonal habits of cigar consumption. The Christmas holiday trade is the chief stimulus to production. Trade journals of the industry indicate a return of optimism

about the middle of the summer, advertising increases, special holiday inducements are extended to retailers, orders come with a sudden rush, the production facilities are taxed to the utmost. Gift sales, are, of course, made in sizable quantities, varying from twenty-five to 100 cigars or more, and this amounts to a temporary consumption stock in excess of current needs. Furthermore, there is a tendency on the part of dealers to overstock in the last-minute rush, and this stock must be disposed of before

Chart IX



further orders are given. This accounts for the decline of production in the winter months.

The abrupt rise in production activity and the decline in April is probably to a certain extent the result of stocking for the Easter trade, but is doubtless more the natural result of depletion of stocks and the preparation for normal consumption requirements.

At this point the question arises whether the factor of seasonal instability is becoming more or less accentuated in recent years. The Federal Reserve Board in its analysis of employment in the cigar and cigarette industry has found evidence of a changing

seasonal, but no separate analysis for cigars is made. Nor are cigar and cigarette data given separately either by the Bureau of Labor Statistics or by the Bureau of Census. Yet the fact that the seasonal pattern for cigarette production is somewhat different from that of cigar production, the indexes which have been plotted on Chart IX for the period 1918-31 showing declines in the winter and early spring of substantially the same magnitude as those for cigars but exhibiting a relatively high degree of stability from May to October, suggested the advisability of an analysis of the changing seasonal in cigar production.

To detect and measure such changes a method worked out by Professor W. L. Crum of Harvard University was used.[2] Monthly production for the period from 1911 to 1930 as indicated by the Internal Revenue reports of stamp sales was used as a basis for the analysis.[3] Link-relatives were computed for the period, and twelve charts of the relatives for the several months constructed. Straight-line trends were fitted to these twelve monthly series by the method of least squares. The results for the central value and the annual increment are given in Table 15. The central value, for any one month, applies to the middle of that month in the middle of the year 1920. By use of the given annual increment, the ordinates of trend for January 1, 1911, and January 1, 1930, were computed in each of the twelve cases. The results, which appear in Table 15, are typical link-relatives describing the seasonal movement at the particular time desired. By the usual process of adjustment, the final indexes for January 1 are derived, the results of which appear in the last two columns of the table. The differences between these two columns reflect the results of the progressive changes in the seasonality of cigar production over the twenty years. These changes are revealed graphically in Chart X.

It will be noticed by reference again to Table 15 that quite significant trends appear in the relatives for all months except March, April, May, August, and September. The sharp upward trend in October and the declines in November and December

[2] "Progressive Variation in Seasonality," *Journal of the American Statistical Association,* March 1925, pp. 48-64.

[3] These data, which were obtained from secondary sources, were verified and corrected by the Bureau of Internal Revenue through the courtesy of Mr. M. F. Snider of the Tobacco Division, Washington. See Appendix C.

TABLE 15

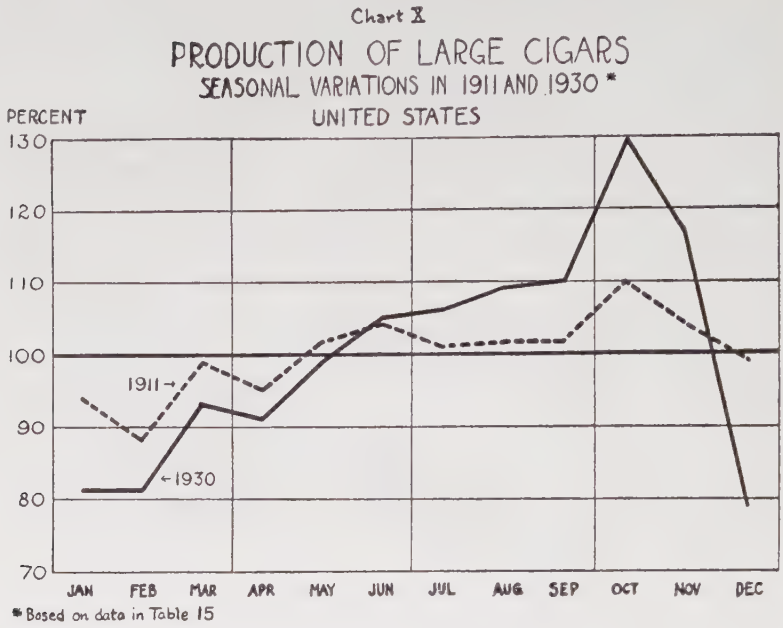
PRODUCTION OF LARGE CIGARS, TERMINAL INDEXES OF SEASONAL VARIATION

(Link-relative Method)

Months	Link Relatives					
	Central Value	Annual Increment	Ordinate for January 1		Adjusted Indexes for January 1	
			1911	1930	1911	1930
January.....	98.5	.3556	95.1	101.9	94	81
February....	97.5	.3218	94.4	100.6	88	81
March.....	113.5	.0526	113.0	114.0	99	93
April.....	96.5	.0646	95.9	97.1	95	91
May.....	107.8	.0482	107.3	108.3	102	99
June.....	104.3	.1422	102.9	105.6	104	105
July.....	98.6	.2226	96.5	100.7	101	106
August.....	102.5	.0112	102.4	102.7	102	109
September...	100.7	.0406	100.3	101.1	102	110
October.....	111.8	.4894	107.2	116.5	110	129
November...	92.8	− .2384	95.1	90.6	104	117
December...	81.0	−1.4744	95.0	67.0	99	79

are especially significant in the light of what has been noted above concerning consumption habits and holiday demands.

If the foregoing analysis is correct, it evidences not only the existence of a changing seasonality of production in the cigar industry, but also points to the more important fact that the seasonal factor as an element of instability is becoming more and



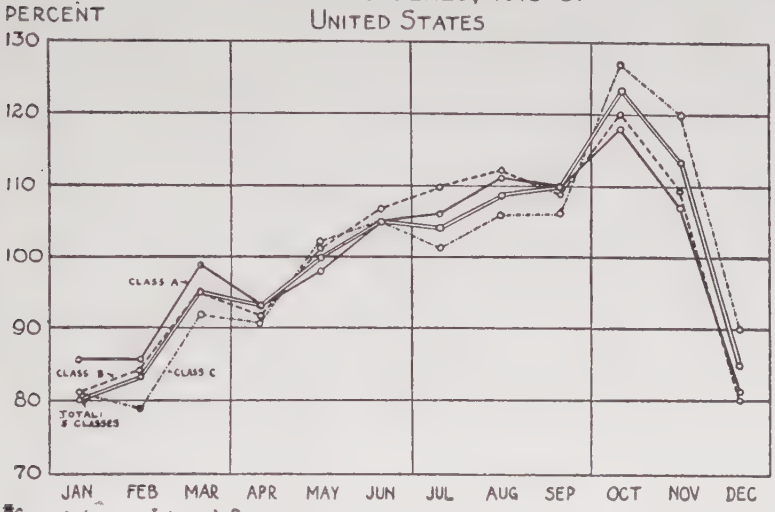
more acute. It will be noted by reference to the curves in Chart X that there has been a marked increase in the amplitude of the seasonal swing, although the various phases of the two curves are substantially alike.

Thus far in the analysis cigars have been treated as a whole. The question arises whether the different classes of cigars present the same type of seasonal pattern. Owing to the fact that monthly data for stamp sales are available only from 1918, the period for which such an analysis can be made is somewhat shorter than that used in the preceding study of seasonal fluctuations for the large cigars as a whole.

Nevertheless, when the various cigar series were subjected to seasonal analysis for this period, 1918 to 1931, the same general seasonal pattern was revealed for these classes as was found in the series for all classes combined. The indexes representing the seasonal changes in the various classes have been plotted on the following charts. As would be expected, the holiday peak is extremely pronounced in the more expensive cigar classes and in the Class E series occurs one month later than in the other classes. There are great differences in amplitude of the seasonal swing for

Chart XI - A

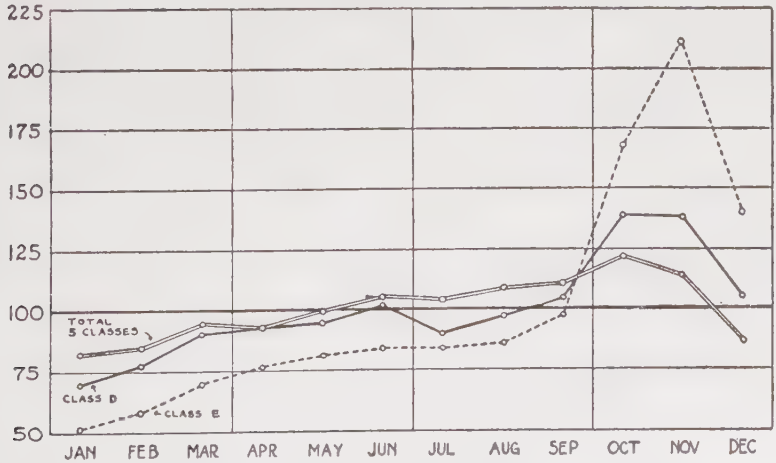
PRODUCTION OF LARGE CIGARS BY CLASSES
SEASONAL INDEXES, 1918-31*
UNITED STATES



*Computed from Internal Revenue figures

Chart XI - B

PRODUCTION OF LARGE CIGARS BY CLASSES
SEASONAL INDEXES, 1918-31 *
UNITED STATES



*Computed from Internal Revenue figures

TABLE 16

SEASONAL INDEXES: CIGARETTES AND LARGE CIGARS BY CLASSES

	Class A			Class B			Class C		
	1918 to 1924	1925 to 1931	1918 to 1931	1918 to 1924	1925 to 1931	1918 to 1931	1918 to 1924	1925 to 1931	1918 to 1931
January	90	85	86	93	77	81	89	70	81
February	85	86	86	88	80	84	85	76	79
March	99	97	99	97	94	95	96	86	92
April	93	95	93	91	92	92	93	91	91
May	97	101	98	102	101	101	101	105	102
June	107	105	105	105	108	107	103	107	105
July	103	107	106	104	110	110	100	101	101
August	113	110	111	107	113	112	105	107	106
September	108	109	110	105	113	109	102	110	106
October	116	123	118	114	128	120	117	139	127
November	106	109	107	107	109	109	114	127	120
December	83	73	81	87	75	80	95	81	90

	Class D			Class E			Cigarettes		
	1918 to 1924	1925 to 1931	1918 to 1931	1918 to 1924	1925 to 1931	1918 to 1931	1918 to 1924	1925 to 1931	1918 to 1931
January	82	60	70	61	37	51	105	98	102
February	81	72	77	81	44	58	88	85	87
March	99	90	90	87	59	70	103	99	99
April	94	92	93	83	61	76	92	96	93
May	99	102	97	79	78	80	103	104	103
June	98	103	101	87	80	82	110	112	111
July	82	95	90	74	80	82	103	109	109
August	93	105	98	87	79	85	108	109	109
September	97	106	105	96	96	89	108	104	104
October	132	149	138	139	210	168	109	108	106
November	126	142	137	188	266	211	96	93	94
December	117	84	104	138	117	139	75	83	83

the various classes, the difference being greatest for the most expensive cigars, but the greater weight of the A, B, and C Classes tempers the magnitude of the swing when all classes are combined.

In order to ascertain to what extent the classes differed with respect to the progressive seasonal characteristics manifested in the combined series, the series for each class was divided into equal periods, and separate seasonal indexes computed for each period. The results are recorded in the table on page 96.

In all cigar classes the indexes for the first three or four months are much lower in the earlier period, 1918 to 1924, than in the latter half of the period, 1925 to 1931. During the summer months the indexes for the earlier period are in general somewhat higher than those for the later period, and in the fall months, as would be expected, this difference between the relatives becomes extremely accentuated. In the peak month for Class A the difference in amplitude as measured by the index numbers is only 7 points, for Class B 14, Class C 22, Class D 17, and for Class E 78 points.

In order to indicate more clearly the changes in the various classes over the period under review, tables of the range and the average deviation between the earlier and later period are given below.

It will be noted that the range is greater in the later than in the earlier period in all the cigar classes, while the range for cigarettes, which was 35% in the first period, was only 29% in the second period. In the second period ranges of 29% for cigarettes and 50% for Class A cigars are in striking contrast to a range of 229% for the most expensive Class E cigars. Furthermore, among cigar products between the two periods the range has become relatively more accentuated in the Class E cigars than in any other class.

The amplitude of the seasonal swing for both periods was greatest in the Class E cigar series and was least in the cigarette series. In the earlier period the average deviation for the Class A relatives was slightly more than that for either Class B or C, but in the period 1925-1931 the average deviation for Class A was less than for any other cigar class. It will be observed also that, although the average deviation in both periods is much greater for Class E than for Class C, the relative increase in amplitude from the earlier to the later period is much greater for the Class C

RANGE OF SEASONAL INDEXES

Class	A	B	C	D	E	Cigarettes
First Period 1918–1924.....	33	27	32	51	127	35
Second Period 1925–1931.....	50	53	69	89	229	29

AVERAGE DEVIATION FROM 100

Class	A	B	C	D	E	Cigarettes
First Period 1918–1924.....	8.8	7.3	7.0	12.5	27.5	8.2
Second Period 1925–1931.....	10.6	13.6	16.0	17.8	48.8	7.6

product. This pronounced shift in the seasonal pattern is especially significant in view of the important position occupied by this medium-priced class with respect to both volume of production and profits. The encouraging feature revealed by the data, however, is the fact that Class A cigars, the only class which has displayed an upward trend in volume of production in recent years, have been but slightly affected by the factor of progressive seasonality.

As has already been noted, no separate seasonal indexes of employment in the cigar and cigarette industries have been computed by any of the government agencies, but it is the belief of the writer that the measurements made above on the basis of the production data indicate fairly accurately the character and extent

of the seasonality in employment. The seasonal movements in employment in the cigar industry would doubtless exhibit a pattern somewhat similar to that found by the utilization of production data, although one could expect the variations in general to be less extreme.

This conclusion is strengthened by reference to the employment seasonals computed by the Federal Reserve Board for the combined cigar and cigarette industries of the United States. These indexes show more moderate fluctuations, but the pattern in general is the same as that for production. Being heavily weighted, however, by measures of cigarette employment, the indexes for the early spring and summer months do not display departures from normal to the same extent as the indexes of production.

In further corroboration of the above statement of the relationship believed to obtain between seasonal movements in employment and productive activity in the cigar industry, reference may be made to the findings of Dr. Simon Kuznets in his recent intensive study of seasonality in industry and trade.[4] A comparison of the amplitude of production and employment in a large number of industries demonstrates rather conclusively the fact that there are in general quite similar seasonal patterns for production and employment and marked differences in amplitude. These relationships are explained by Dr. Kuznets as follows:

> The reason that seasonal variations in employment appear milder than those in production seems rather clear. Since the data on employment measure the number of people on the payroll, they reflect changes in total employment only. As long as a man is employed by an enterprise, even though he may be absent on vacation, or on sick leave, or not working full time, his name is retained on the payroll. On the other hand, over-time work is not reflected in the data. Hence, series on employment are likely to underestimate short-time fluctuations in the labor of the working force and therefore tend to show milder seasonal swings than actually characterize its activity.[5]

In conclusion it may be said that in so far as can be discovered no efforts of any importance have been made by the cigar industry to cope with these seasonal factors of instability. If the

[4] Simon Kuznets, *Seasonal Variations in Industry and Trade* (National Bureau of Economic Research, New York 1933), *passim.*

[5] *Ibid.*, p. 213.

consumption of cigars had been characterized by a greater month-to-month uniformity than has in fact been the case, and if the annual consumption had continued to increase with the growth of population, individual manufacturers by careful market surveys and progressive merchandising methods might have been able to iron out some of this seasonality.

Since the cigar is not a perishable product if kept under the proper conditions, and since the seasonal nature of the demand is quite apparent, the question might well be raised why cigar manufacturers should not spread their production more evenly over the entire year. But this would entail a considerable amount of additional cost. In order to keep the cigars fresh, special humidor storage facilities would need to be provided, and the diversion from the usual plant routing would entail extra handling costs. This problem might not be a serious one in small plants, but in the highly mechanized plants of today the whole operating scheme is based upon a chain system beginning with the raw-material supply and ending with the casing and preparation of the product for shipment. Competition is therefore not likely to permit individual producers acting alone to utilize such methods. Furthermore, in plants using mainly automatic machinery, less difficulty is experienced in shutting down during the off-season period than in plants utilizing hand labor, and in the former the production can be forced to respond quickly to increasing demands of the late summer and fall months.

Altogether the problem is a disconcerting one, but it is from year to year becoming more serious, both from the standpoint of the producer and from that of the worker, and it appears that if a solution is to be found it will be through the recognition of the problem as one confronting the industry as a whole. The recognition, in other words, of a common problem and common responsibility for its solution seems to be the fundamental prerequisite to any movement capable of modifying or minimizing the factors of seasonal instability.

CHAPTER VIII

CYCLICAL FACTORS OF INSTABILITY

In order to study the cyclical movements in the cigar industry a separate analysis was made for each of the five classes of cigars over the period for which revenue data on tax-paid withdrawals are available. An identical analysis was made of small-cigarette data for the same period for the purpose of comparison. The earliest year for which monthly tax-paid withdrawal figures for cigar classes are available is 1918. Hence, the period studied extends from January 1918 to December 1931.[1]

The seasonal movements having been smoothed out of each series by the method of a twelve-month moving average, Classes A, C, and D each revealed three well-defined cycles, Class B, two, Class D, four, and cigarettes, two cycles. The dates for these cycles, together with the "standard reference dates" for the cycles of general business for the period under review, and the computations upon which the following analysis is based, are given in Appendices F, G, and H. The standard reference dates for business cycles of the United States for the period covered in the cigar analysis are as follows:

Revival	*High*	*Months*	*Recession*	*Low*	*Months*
May 1919	January 1920	9	February 1920	September 1921	20
October 1921	May 1923	20	June 1923	July 1924	14
August 1924	October 1926	27	November 1926	December 1927	14
January 1928	June 1929	18	July 1929	December[a] 1931	30

[a] The last low was arbitrarily selected for the purpose of this analysis.

These reference periods are the result of studies made by the National Bureau of Economic Research, "determined roughly," as Wesley C. Mitchell has put it, "by a study of business annals and made more precise by a study of what statistical data are available from case to case."[2]

[1] Monthly data by classes for this period are given in Appendix E.

[2] *Recent Economic Changes in the United States* (McGraw-Hill, New York, 1929), II, 891.

The average duration of the expansion phase for the Class A series was found to be over twice as long as the average expansion for the Class E or most expensive cigar series. Oppositely, in the contraction phase the average length for the E series was over twice that for the A series. Furthermore, in the expansion phase the duration of the A series was exactly twice the average length of the four corresponding phases of the general business cycle and the E series was 3.5 months shorter, while in the contraction phase the A series was 8.2 months shorter than the business cycle average and the E series was 4.5 months longer. This relationship was to be expected. Class A, or five-cent cigars, partake of the nature of necessities, while Class E, or those cigars selling for more than twenty cents, are clearly luxury products. In a period of business recovery, Class E products, while responding quickly to changing conditions, nevertheless reach their peak almost in correspondence with cycles of general business. Class A cigars offer strong resistance to the downward turn of business, and the expansion period is therefore long, but once the contraction is under way it continues rapidly and reaches the low again in a shorter duration of time than the expensive cigars, which are consumed by men whose expenditures for such luxury goods need not be quickly or substantially curtailed.

In those cycles averaged, the Class D series presented an exception in the expansion phase to what might be expected, the duration being of the same length as for Class A. Likewise, in the contraction Class C was the exception, the duration being longer than for either Class D or E. Class B, although a relatively low-priced cigar series, does not conform even remotely to Class A with respect to timing, and displays irregularities of various types throughout the cyclical analysis. Only one of the two cycles apparent in this series was well defined, and there are no movements in the series corresponding to the last two cycles in general business. This is doubtless due to the fact that this class has been steadily losing year by year to Class A and at present is of no practical importance in the industry.

The cigarette series with its rapidly rising trend shows an average cycle of much greater duration than that for any of the other series except Class B cigars. The average expansion phase is over three and one-half times as long as the contraction, and in this respect, as would be expected, it exhibits the same charac-

teristics as the Class A cigars, although the cigarette expansion phase is much longer than that phase in the Class A series.

In order to obtain comparable values for the purpose of studying the amplitude of the cyclical movements of the various series, standings at the cyclical turning points were calculated by dividing the relatives corrected for the seasonal at each of the highs and lows by the average monthly value of the whole cycle. From these standings it was possible to compute the average rise or fall from one phase of a cycle to another, the total change per cycle, and the average rise or fall per month. Some of the most significant averages computed in this manner are given below.

AVERAGE CYCLICAL RISE OR FALL

	Low to High	High to Low	Full Cycle Change
Cigarettes.....	63.0	32.0	95.0
Class A cigars.....	52.6	16.0	68.6
" B "	48.5	149.5	198.0
" C "	48.6	58.0	106.6
" D "	106.3	99.6	206.0
" E "	85.5	110.5	196.0

AVERAGE CYCLICAL RISE OR FALL PER MONTH

	Rise per Month	Fall per Month	Full Cycle Change per Month
Cigarettes.....	1.2	3.5	1.8
Class A cigars.....	2.2	2.0	2.1
" B "	6.9	2.8	3.4
" C "	2.2	2.0	2.1
" D "	2.9	9.2	4.3
" E "	5.9	5.3	5.5

Wide differences in cyclical amplitude between the cigarette series and the expensive-cigar series are revealed, and also between the cheaper and more expensive cigar series. The difference in cyclical amplitude between cigarettes and the expensive cigars is greater in the contraction than in the expansion. This is true also between Class A cigars and Class E or Class D cigars. In the expansion Class A exhibits a slightly greater amplitude than Class C. But when the average rise and the average fall for the various series are reduced to a per-month basis there is no difference between Class A and Class C in either contraction or expansion. But on the whole the per-month changes are greater in the expensive-cigar classes than in cigarettes and the cheap and medium-priced cigars.

As a further step in the analysis of the cyclical movements in cigar production, measurements were made of the cyclical behavior of these series within "standard reference periods" marked off by revivals and recessions. This method of analysis, which has been used for some time by the National Bureau of Economic Research, involves a derivation of cyclical patterns by employing as a basis the turning points in general business, instead of the low-high-low points in each specific series. Relatives, based upon the average value of the various cycles in each series corrected for seasonal changes, were computed for nine stages of the cycles in general business as marked off by the standard reference dates for the period studied. The expansion and contraction phases of each cycle were divided as nearly equally as possible into thirds, and the nine reference stages were, therefore, as follows: three months centered on the reference date for revival, successive thirds of the expansion, three months centered on the reference date for recession, successive thirds of the contraction, and three months centered on the reference date for the next revival.

These relatives for each stage in the various cycles of general business, together with the averages for the nine stages in each cigar and the cigarette series are recorded in Appendix G. The results of the same series of calculations, based upon the use of the actual turning points of the specific cycles in the cigar and cigarette series and employing the same methods of breaking the series into segments, are tabulated in Appendix H. From these tables it is possible to compare the specific cycles with the cycles marked off by the standard reference dates.

An examination of the average standings reveals that the closest conformity between the reference cycles and the specific cycles occurs in the Class C and Class E series, and that well-defined specific cycles appear in all series except that for cigarettes. The closest correspondence of the two cycles in the expansion phase is found in Class C, and the closest agreement in contraction in Class E. While the amplitude of the specific cycles is greatest in the most expensive cigar class, the difference in amplitude between the specific and reference cycles is greatest in Class A and C. When the A series, which displays a well-marked cyclical pattern, is cut up into segments on the basis of the standard reference dates the specific cycles are almost canceled out. This appears to evidence the fact that the cheap-cigar cycle has been influenced more by factors peculiar to the industry than to conditions in general business. The same situation is true with respect to the cigarette series.

Finally, the cyclical behavior of the cigar and cigarette series within the phases of expansion and contraction of the cycles of general business may be more accurately presented and measured by reference to the following tables of conformity.

The tables were computed from the average standings of the specific cycles at the points marked off in the standard reference periods for the four cycles of business covered by the study. The changes, plus or minus, between each succeeding standing of the various cycles were first obtained.[3] From these changes it was possible to determine what combination of periods in the specific cycles would establish the highest degree of conformity with the phases of expansion and contraction in cycles of general business.

It will be observed that, on the basis of the above method of analysis, the cigar and cigarette cycles on the whole conform to the cycles in general business. With an expansion phase running from stages II to V and a contraction from VI to I of the phases of the four cycles in general business, the medium-priced or Class C cigar series shows a higher degree of conformity than any of the other series. The slight lag in the expansion period displayed by the medium-priced and expensive products is probably due to the fact that, during the declines in business, expenditures for tobacco are reduced in part by a transference to the cheaper types, and that incomes are not redirected to the expensive

[3] Tabulated in Appendix G.

TABLE 17

MEASURES OF CONFORMITY TO CYCLES IN GENERAL BUSINESS CONDITIONS

Series	Period Covered by Expansion	Conformity[a]		
		Expansion	Contraction	Differential Index
Class A cigars....	I to V	+100	− 50	+100
" B "	I to IV	− 50	+100	+100
" C "	II to V	+100	+100	+100
" D "	II to V	+100	+ 50	+100
" E "	II to V	+ 50	+100	+100
Cigarettes.....	I to V	+100	0	+100

[a] +100 indicates perfect positive conformity.

cigar products immediately upon the turn in general business conditions.

The cigarette series and the cheapest cigar series show a 100 per cent conformity to general business in the expansion phases, but in the former, in the contraction phase of two out of the four cycles, the trend of expansion was strong enough to offset the forces of general declining business conditions, and in the latter series (Class A cigars) the decline was checked in three out of four cycles.

The conclusions, which appear to be warranted on the basis of the behavior of these two series, are in harmony with the observations made at the beginning of this chapter. The consumption of five-cent cigars and small cigarettes has been expanding rapidly throughout the period surveyed. While in the long run these products have been subject to an expansible demand, the short-run demand is relatively inelastic. Consumers, habituated to their use, look upon them as necessities, so that during the cyclical movements in business the normal course of consumption is not seriously disturbed.

In so far as the cigar industry is concerned, the cyclical movements evidenced in the above study may be of aid in accounting for the dominant position attained by Class A production. No other cigar class has been able to offer effective resistance to declining general business conditions. With each successive cycle there has probably been a considerable transference of consumer demand from high-priced to low-priced cigars which has been permanent. Manufacturers of medium- and high-priced cigars who have been in a position to shift in periods of declining business to low-priced cigars have been better able to maintain production. In the main, this advantage has been with the mechanized producers, rather than with numerous small-scale producers using the hand process.

It has already been noted that no employment data for the cigar industry are available, yet it is probable that, because of the close causal connection between production and employment, a fairly close correspondence would be discovered between the cyclical movements in two such series of data for the industry. A number of studies give support to such a conclusion. Professor Pigou, for example, shows that for certain English industries the general cyclical patterns for employment and production are similar, but that the amplitude of the swings are somewhat different.[4] The variations in production appear to be wider on the whole, than variations in employment. Professor Pigou, however, does not consider this latter fact of any great moment; the important consideration for the purpose of measuring industrial fluctuations is the choice (where choice is open) of the most accurate and dependable statistical data. Unfortunately, no choice of measures offered itself in this study, but it is believed that the cyclical movements based upon production reflect fairly closely the movements in employment conditions.

[4] A. C. Pigou, *Industrial Fluctuations* (Macmillan and Company, Ltd., 1930), Part I, Chap. II.

CHAPTER IX

CONCLUSIONS

In the preceding chapters of this study a number of factors contributing to instability of production and employment in the cigar industry were analyzed. There are doubtless other factors which have contributed to the situation, but it is believed that the most important have been considered.

The research was not undertaken for the purpose of discovering and prescribing specific remedies for all of the ills of the industry. But it was hoped that an adequate and comprehensive analysis of the most important factors of instability would yield information and facts which would in and of themselves suggest or indicate the direction in which the industry should move in any attempts to improve the situation with respect to these instabilities. The most significant facts yielded by the analysis of the data and their implications for the future of the industry may now be briefly summarized.

Fundamental changes in the demand for tobacco products, due to the trend toward lighter smoking which received added impetus during the War, have occasioned a reduction in large-cigar production from a peek of 8 billion in 1920 to 6½ billion in 1929 and only slightly more than 5 billion in 1931. During this same period the industry has undergone fundamental changes in organization and manufacturing technique which it was hoped would revive and elevate the industry to its former high position within the tobacco industry. But these changes have not brought about the results contemplated. On the contrary the rapid mechanization of the industry and the movement towards large-scale production and industrial concentration have been attended by serious maladjustments in production and employment.

When the automatic cigar machine was introduced it was thought that consumption of cigars as a whole would be stimulated. Prices of cigars had been increasing, and this together with the growing competition offered by the cigarette industry

was not only inducing cigar smokers to change to the cheaper cigarette but was also making it doubly difficult to cultivate cigar tastes among the young men entering the ranks of tobacco consumers for the first time. The automatic machine has not only failed to accomplish the expected rejuvenation of cigar consumption but has engendered a type of productive activity which has quite largely contributed to the demoralization of those divisions of the industry devoted to the production of the higher grades of cigars. For the successful operation of the machine, mass production must be attained and assured, and this was, of course, found possible mainly in the low-priced field. The major interest of the relatively few large-scale producers, who practically control this low-priced field, has been devoted, therefore, to the encouragement of the consumption of the five-cent cigars. Admitting for the moment that the quality of the present machine-made five-cent cigars is superior to that of the same priced cigar made prior to the introduction of machine methods, the product is nevertheless not of the quality designed to command the continued favor of smokers nor to cultivate the taste and appreciation of the better grades of cigars. From the standpoint of the industry as a whole, this inordinate amount of attention which is being focused on the cheap cigar is not only unfortunate but may be disastrous. The five-cent cigar or the even cheaper than five-cent cigar[1] which does not satisfy the smoker and which bases its appeal mainly on a price basis will not only, as is already apparent, ruin the better cigar business, but probably will be unable to hold any important position in competition with the cigarette and smoking tobacco.

There is one other possibility. The great bulk of the five-cent-cigar production is now concentrated in the hands of less than a dozen large firms. If the present rate of concentration proceeds it may not be long until all of the cigar production is controlled by three or four producers. In that event it might be possible, by herculean advertising campaigns, to reconvert tobacco consumers to the higher-priced quality cigars. This would, however, be a tremendously high price to pay for the present disinclination to plan for the future, and is quite unlikely because in such a situation the efforts of the producers would probably still be absorbed in a fierce competitive struggle in the low-priced fields.

[1] The American Tobacco Company is now selling its "Cremo" cigar to retail at three for 10 cents.

The analysis of such machinery and employment data as were available evidenced certain important elements of instability in employment. It is estimated that the number of employees displaced by the introduction of automatic machinery to the year 1931 was over 21,000. To have retained all of these workers in the industry would have required a proportionate increase in the total production and consumption of cigars, but the trend, as we have seen, has on the contrary been downward. Furthermore, very few of the employees required to operate these new machines were chosen from the ranks of those workers trained under the older methods of manufacture. Various reasons for this have been given by manufacturers. It was claimed by some that hand workers were temperamentally unfit for machine tasks, by others that hand workers usually expressed an aversion to assuming such tasks, and walked out when machinery was introduced, but in the main the real reason is to be found in the fact that young inexperienced girls could be employed and quickly trained at wages far below those sufficient to interest the skilled hand workers.

Moreover, this displacement of labor in individual establishments in most cases, especially in the last five or six years, was accomplished with demoralizing suddenness. No advance warning was given to the workers that their services would be no longer needed, and in some cases entire communities suddenly found their chief source of industrial livelihood completely lost through the decision of cigar manufacturers to concentrate manufacturing in other areas.[2] Some changes were, of course, effected without such serious dislocations. For example, gradual changes, especially when demand was increasing, could be accomplished with a minimum of labor displacement, but in the last few years these desirable conditions have not obtained and the increasing rigors of competition have forced such a rapidity of mechanization and concentration that there has "seemed to have been the most ruthless disregard of human needs."[3]

Some of the most disorganizing and injurious effects of tech-

[2] A more extended account of the difficulties of this transition is to be found in a bulletin recently issued by the Women's Bureau of the United States Department of Labor. Data were obtained from a survey of 110 cigar factories in 11 states. See *The Effects on Women of Changing Conditions in the Cigar and Cigarette Industries*, Bulletin of the Women's Bureau, No. 100, United States Department of Labor.

[3] *Ibid.*, p. 37.

nological change upon employment might have been avoided or their severity considerably tempered by the effective functioning of a strongly organized, forward-looking union, but the Cigar Makers' International Union until recently rather vigorously opposed, as was pointed out in Chapter VI, the introduction of the automatic machine, and, regardless of whether this may have been justified in the interest of the industry in the long run, the union lost any opportunity it might have otherwise had of influencing the determination of wage policy and general conditions of employment in the mechanized division of the industry.

While the union leaders have not relaxed their efforts to unionize the machine shops, nor relinquished hope that it will be ultimately accomplished, some recent tendencies in union policy seem to point to the fact that for the present, at least, these leaders are convinced that union interests are most closely identified with those of the small independent producers. This appears to be the point of view calculated to best promote the general interest of the industry. The generous coöperation of the union in the matter of bills of prices, especially in the low-priced field where the small-scale producers experience the competition of machine-made products most keenly, and the continuance and widening of such activities as are now being attempted through the Cigar Makers' Coöperative Association are the types of union activity most likely to be of the greatest immediate benefit.

Certain influences external to the cigar manufacturing industry itself have also contributed to instability. Chapter IV included a brief account of how a relatively small group of growers of American shade-wrapper leaf have been able, under the cloak of our American protective policy for domestic infant industries, to force on a large part of the cigar industry an artificially high level of raw material costs. About 50% of the total domestic production of cigars is wrapped with imported leaf, the great bulk of which is imported from Sumatra. Consumers have become accustomed to cigars wrapped with this leaf, over 90% of all domestic cigar tobacco being used in cigars covered with foreign wrappers. Furthermore, the use of shade-grown leaf is limited mainly to higher-priced cigars and is considered by manufacturers only as a very inferior substitute for Sumatra wrapper leaf. Cigar manufacturers have urged tariff relief whenever opportunity has offered. Facts and figures from many sources have

been collected and presented to Congress. The Tariff Board in 1931 undertook a thorough analysis of the situation, the findings of which serve to strengthen the contentions of the manufacturers. Apparently, relief in this direction must await a general downward revision in our tariff rates.

It was shown in Chapter III that internal revenue taxes have constituted a heavy burden upon the cigar industry. Cigars were classified for taxation during the war period according to the intended retail selling price, the rates were sharply advanced, and have been reduced but once—in the Revenue Act of 1926. The movement toward industrial concentration and increased production in the low-priced field had, however, in spite of the heavy taxes, proceeded to such an extent by 1926 that the reductions granted at that time have accrued mainly to the benefit of the five-cent cigar.

Moreover, although the wartime rates on cigarettes have not been reduced, the annual production and consumption have increased enormously. There is, therefore, slight prospect that, even if further tax relief were granted to cigars, it would be of any ultimate benefit as a stabilizing force.

It has also been noted that fluctuation of stocks on hand has constituted a problem of considerable importance to the cigar industry. The importance of this factor proceeds out of the fact that tobacco must be cured and aged before its utilization in manufacture. The pre-war stocks of cigar leaf have not only fluctuated considerably in absolute amounts, but of greater significance is the fact that the annual percentage excess of stocks over amounts actually used in manufacture has since 1925 been greater for non-cigar types than for cigar types of tobacco.

This unfavorable competitive situation is the result not only of unattractive farm prices for leaf tobacco but also of climatic and other agricultural conditions. With the total demand for cigar tobacco continuing downward, accompanied by unfavorable raw material price offers, there is little likelihood that the industry can depend upon any considerable improvement in the situation with respect to stocks on hand.

From the standpoint of demand one of the most serious problems confronting the industry is that of attracting and retaining a new and larger consumer clientele. The problem is a formidable one and in any event cannot be solved immediately. The nature

of the handicaps under which the industry labors have already been outlined above.

Advertising technique in the future must be vastly improved, the possibilities of which cannot here be probed, although it is believed that a thorough survey in this direction should be made. It may be ventured, however, that in view of the results of a limited number of past investigations, cigar advertising copy which devotes less attention to price, volume of sales, and to some of the more obviously overworked themes, and places the major emphasis on quality, upon history and background of cigar smoking, and upon the nature of the pleasure and satisfaction to be derived from the product, will be the advertising most likely to benefit the industry.[4]

This advertising may be conducted as at present by individual manufacturers, or through joint efforts. Coöperative advertising projects, as was pointed out in Chapter III, were several times proposed for the cigar industry with a view to widening the total cigar market and to gain back and retain the proportion of the market which had been lost to cigarettes. It was observed by various cigar producers that the skillful and apparently successful advertising of a few of the large firms was obtaining results only at the expense of other competitive units of the same industry. This type of advertising had constituted a particularly heavy burden upon the few large-scale producers who were forced by competition to adopt it. Furthermore, it was seen to be quite clearly wasteful when viewed from the standpoint of the welfare of the cigar industry as a whole since the total consumption of cigars was declining from year to year and consumer demand was being transferred from higher grades to cheaper grades of cigars. Advertising was aiding in the elimination of the small firm, and was not permitting survival upon the basis of real quality or price competition. Large as well as small producers appeared at first to be vitally interested in the possibilities of joint advertising as a means of extending benefits of a widening market to all.

But, as we have seen, these coöperative efforts were fruitless. Sufficient funds could not be collected to continue the projects, jealousy and mistrust developed, which, in combination with the

[4] See Henry C. Link, "A New Method of Testing Advertising Effectiveness," *Harvard Business Review,* January 1933, p. 165. Also *Printers' Ink,* October 1927, p. 233.

characteristic inertia of so many producers in the industry, led to their early abandonment. Now that a half-dozen or so of the large-scale producers have attained such a position of dominance in the industry, it seems highly improbable that they can be interested in any well-conceived plan for joint action in the interests of the entire industry.[5] But it is just for this reason that the great majority of the smaller producing units should be zealously concerned in any project of common interest designed to salvage and save the remaining vestiges of the industry for themselves.

The possibilities and limitations of coöperative advertising were discussed in Chapter III. It may be that, upon a thorough survey of the situation, the costs of coöperative advertising will be found to outweigh the benefits to be derived even among these small-scale independent producers. But in view of the similarities between the situation in the cigar industry and that in several other industries in which coöperation has been successful, any possibilities or opportunities in this direction should be fully investigated.

Furthermore, the coöperative movement on the part of small-scale independent producers need not, and of course should not, be limited to the function of coöperative advertising. While it would be impossible for such a group to proceed as far and as effectively as if the coöperating group included the larger corporations as well, a number of important, legitimate trade association activities might profitably be undertaken, such as developing methods of standard accounting and cost practices, collecting and distributing statistics on business transacted, promoting the reduction and standardization of brands and styles of cigars, coöperation in the study and solution of problems of production, marketing, and employment, and the development of measures for reducing seasonal fluctuations in the operation of the industry.

An analysis of monthly tax-paid withdrawals revealed important seasonal and cyclical factors of instability. From the very beginning of the period for which tax-paid withdrawal data are available, that is from the year 1911, cigar production has been characterized by marked seasonal variations due to the nature of

[5] Since this was written, it has been learned that the Associated Cigar Manufacturers and Leaf Tobacco Dealers Associations are engaged in a survey of conditions and prospects for the industry, an altogether hopeful development.

the demand. But these variations have become more and more pronounced in recent years, and therefore present a serious obstacle to any efforts toward stabilization. The factor of progressive seasonality was evidenced not only in the most expensive cigar classes but also in the cheapest grades. Cigarettes, the important competitor of cigars, have not exhibited such fluctuations, the production being more evenly distributed over the year. The difficulties occasioned in the cigar industry by this factor are serious, yet little or nothing has been done to meet and solve them. Reasons were advanced as to why manufacturers acting individually find it practically impossible to cope successfully with this problem, and it was suggested that proposals for dealing with it coöperatively probably have the best chance to succeed.

Finally, a study of the cyclical movements in production was made for the purpose of determining to what extent the various classes of cigars are affected by the alternating phases of expansion and contraction in conditions of general business. It was found that this factor of instability appeared to a much greater extent in some classes of cigars than in others. The average duration, for example, of the expansion phase for the cheaper cigars was much greater than for the expensive products, while in the contraction the average cycle for the cheaper cigars was much shorter than that for the expensive cigars. Likewise, the amplitude of the cyclical swing for expensive cigars was much greater than that for the cheaper grades.

It is not suggested that such knowledge of the cyclical behavior of cigar production will point to the remedy, for the problem is part of the greater and broader problem of cyclical fluctuations in general business. Yet it is believed that further study of the cyclical factors in the cigar industry may be of considerable value to manufacturers. It may be that proper diversification of production among the various classes of cigars may, at least in individual establishments, have within it important stabilization possibilities. Some understanding of the cyclical nature of the production is at any rate necessary for an intelligent and comprehensive attack upon the many closely interconnected problems now confronting the industry.

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APPENDIX

CIGARS MANUFACTURED AND PER CLASSIFIED

(THOU

Output—Cigars	1921		1922		1923		1924	
	Amount	%	Amount	%	Amount	%	Amount	%
Under 500,000	924,705	13.7	752,097	11.2	863,360	12.4	698,719	10.6
500,000 to 1 million	359,955	5.3	335,864	5.0	295,292	4.2	239,742	3.6
1– 2 million	462,705	6.8	390,310	5.8	401,993	5.8	336,977	5.1
2– 3 million	356,320	5.3	345,219	5.1	333,409	4.8	273,502	4.1
3– 4 million	260,995	3.9	266,518	4.0	375,013	5.4	255,824	3.9
4– 5 million	329,839	4.9	301,749	4.4	250,431	3.6	262,570	4.0
5–10 million	1,233,352	18.4	1,178,065	17.5	1,294,451	18.0	1,174,158	17.8
10–20 million	1,073,035	16.0	1,121,193	16.7	1,284,560	18.5	1,036,347	15.7
20–40 million	668,444	10.0	1,241,175	18.5	919,062	13.2	1,057,994	16.0
Over 40 million	1,056,747	15.7	790,163	11.8	977,677	14.1	1,261,843	19.1
Total	6,726,095	100.0	6,722,354	100.0	6,950,247	100.0	6,597,677	100.0

Source: *Reports of the Commissioner of Internal Revenue.*

A

CENTAGE OF TOTAL IN FACTORIES BY OUTPUT

SANDS)

1925		1926		1927		1928		1929		1930	
Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
655,950	10.2	519,984	8.0	453,556	7.0	428,637	6.7	360,268	5.5	307,892	5.2
201,446	3.1	195,330	3.0	170,418	2.6	153,095	2.4	131,899	2.0	103,341	1.7
305,098	4.7	282,347	4.3	241,205	3.7	196,376	3.1	181,541	2.8	165,004	2.8
261,100	4.0	219,186	3.4	218,769	3.4	203,201	3.2	172,495	2.6	148,535	2.5
227,883	3.5	212,079	3.3	154,674	2.4	179,582	2.8	167,498	2.6	145,624	2.5
221,764	3.4	236,707	3.6	190,780	2.9	175,922	2.8	134,264	2.1	112,467	1.9
1,097,527	17.0	1,014,508	15.6	865,211	13.3	598,376	9.4	652,562	10.0	494,839	8.4
1,068,693	16.5	1,003,768	15.4	977,621	15.0	936,105	14.7	870,642	13.4	672,815	11.4
1,012,338	15.7	1,192,264	18.4	1,081,048	16.6	1,150,560	18.1	803,551	12.3	808,082	13.7
1,411,395	21.8	1,622,468	25.0	2,165,723	33.2	2,351,329	36.9	3,043,813	46.7	2,935,291	49.8
6,463,193	100.0	6,498,641	100.0	6,519,005	100.0	6,373,182	100.0	6,518,533	100.0	5,893,890	100.0

APPENDIX B

CIGAR FACTORIES IN OPERATION IN THE UNITED STATES AND PERCENTAGE OF TOTAL CLASSIFIED BY OUTPUT

Output—Cigars	1921		1922		1923		1924		1925		1926		1927		1928		1929		1930	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Under 500,000	13,149	90.19	10,775	89.01	9,282	87.52	8,755	88.64	9,789	90.75	9,281	90.57	8,470	90.95	7,997	91.36	7,694	91.83	6,976	92.37
500,000 to 1 mil.	510	3.49	471	3.89	420	3.96	339	3.43	282	2.61	281	2.74	243	2.60	222	2.53	118	1.40	148	1.95
1– 2 million	324	2.22	273	2.25	284	2.67	240	2.42	213	1.97	196	1.91	167	1.79	139	1.58	127	1.51	116	1.53
2– 3 million	147	1.00	140	1.15	136	1.28	113	1.14	106	.98	89	.86	88	.94	81	.92	70	.83	61	.80
3– 4 million	76	.52	77	.63	108	1.01	74	.74	65	.60	61	.59	44	.47	52	.59	49	.58	42	.55
4– 5 million	73	.50	67	.55	56	.52	59	.59	50	.46	53	.51	43	.46	39	.44	30	.35	25	.33
5–10 million	178	1.22	169	1.39	177	1.66	166	1.68	152	1.40	147	1.43	123	1.32	87	.99	91	1.08	72	.95
10–20 million	85	.58	84	.69	96	.90	77	.77	77	.71	74	.72	69	.74	69	.78	63	.75	49	.64
20–40 million	25	.17	42	.34	34	.32	39	.39	34	.31	42	.40	37	.39	39	.44	29	.34	28	.37
Over 40 million	11	.075	7	.005	12	.11	15	.15	18	.16	23	.22	28	.30	28	.31	37	.44	35	.46
Total	14,578	100.0	12,105	100.0	10,605	100.0	9,877	100.0	10,786	100.0	10,247	100.0	9,312	100.0	8,753	100.0	8,378	100.0	7,552	100.0

Source: *Reports of the Commissioner of Internal Revenue.*

APPENDIX C

MONTHLY TAX PAID WITHDRAWALS LARGE CIGARS

1911–1931

(UNIT: MILLIONS)

	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	530.0	519.6	588.7	581.3	473.4	516.9	679.8	532.8	518.7	663.6	462.8	443.3	559.2	504.0	474.8	433.7	466.1	413.5	427.7	418.9	362.9
February	523.1	528.1	564.3	531.6	473.3	547.0	627.3	555.1	476.3	593.8	496.7	447.2	507.3	498.8	451.6	451.2	441.7	453.6	437.5	426.5	362.8
March	617.0	568.2	585.9	595.3	564.3	611.8	710.0	618.8	549.1	753.2	561.3	529.2	574.5	515.9	504.3	564.2	528.7	497.9	491.3	454.8	440.5
April	546.5	576.0	635.7	583.1	539.1	556.9	673.1	616.4	510.4	663.6	548.1	501.4	532.5	501.4	493.8	509.1	476.0	459.0	550.9	470.0	460.0
May	632.0	624 8	646.0	610.3	574.4	652.6	764.6	593.7	551.7	676.2	555.5	569.2	575.9	553.3	514.5	507.3	540.9	541.5	572.4	523.8	467.3
June	652.1	614.0	643.1	648.2	633.1	666.3	699.3	569.3	577.0	708.1	618.5	615.3	591.5	562.7	569.7	576.6	576.5	576.0	556.7	519.6	517.5
July	584.1	634.1	666.9	674.5	615.7	622.3	647.7	634.6	569.9	678.8	564.6	585.9	589.2	595.1	575.8	568.6	561.2	558.2	589.3	532.8	478.9
August	640.0	651.8	643.4	645.6	630.4	667.3	689.9	624.5	533.2	672.0	622.0	641.2	616.3	573.6	557.4	594.2	604.9	601.9	598.6	517.2	463.3
September	632.2	638.7	688.5	658.8	639.1	664.1	655.1	585.4	575.8	678.6	614.4	625.8	598.8	605.6	575.8	600.0	639.4	586.3	591.7	524.0	449.3
October	700.8	735.5	752.3	678.2	678.2	752.7	752.1	594.8	677.6	704.8	635.8	693.9	711.7	635.2	711.2	664.5	688.9	723.3	701.7	623.9	534.4
November	662.7	673.3	683.3	600.6	689.6	714.8	695.7	537.8	655.4	668.1	615.2	679.3	650.7	601.4	598.5	655.0	654.2	630.5	622.9	528.1	477.5
December	541.3	615.9	633.3	516.3	585.8	691.7	586.0	527.6	662.0	506.1	463.6	561.0	491.4	511.3	473.3	464.6	393.0	411.9	410.9	349.6	304.5
Average	605.1	615.0	644.3	610.3	591.4	638.7	681.7	582.6	571.4	663.9	563.2	574.4	583.2	554.9	541.7	549.1	547.6	537.8	546.0	490.8	443.2

Source: Bureau of Internal Revenue. Revenue Stamp Sales.

APPENDIX D

COMPARISON OF METHODS OF DERIVING SEASONAL INDEXES FOR CIGAR SERIES

PRODUCTION OF LARGE CIGARS 1921–1929

	Moving Average	Ratio of Actual Ordinates to Trend	Link Relatives
January	83	81	85
February	85	82	86
March	96	93	96
April	90	90	91
May	99	99	98
June	105	105	104
July	103	104	104
August	108	110	109
September	109	108	108
October	123	126	120
November	114	117	114
December	86	85	85

APPENDIX E

MONTHLY PRODUCTION OF SMALL CIGARETTES AND LARGE CIGARS BY CLASSES, 1918–31[1]

CLASS A CIGARS (UNIT: MILLIONS)

Months	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	320.0	65.0	170.6	127.0	161.2	208.9	201.5	197.6	182.3	243.3	231.4	242.2	262.2	252.6
February	109.2	74.8	138.9	130.9	156.1	190.2	203.7	194.1	197.4	221.4	240.7	241.7	266.9	232.1
March	119.9	163.6	167.4	155.6	199.1	215.6	201.9	216.9	257.5	260.0	262.2	272.7	282.2	291.4
April	115.5	146.2	146.8	152.9	190.2	194.6	195.0	201.1	225.4	230.7	238.9	301.5	279.3	297.7
May	102.0	157.9	147.9	159.8	213.1	203.9	213.4	213.8	220.8	262.2	267.7	313.5	307.0	314.5
June	84.1	174.5	159.8	186.2	234.7	211.4	222.9	233.3	249.8	278.5	292.6	306.2	301.3	360.7
July	91.3	171.3	151.8	176.7	237.6	209.7	234.4	247.3	256.9	277.9	289.6	324.5	330.2	351.8
August	81.1	194.9	138.0	201.6	261.7	231.0	234.1	225.3	266.4	291.8	318.8	337.3	325.7	337.7
September	75.5	194.9	145.7	201.1	251.9	223.1	245.2	232.8	269.0	310.6	299.2	329.4	326.9	328.8
October	74.6	202.1	152.3	205.2	261.7	255.7	245.9	302.3	278.6	312.2	352.4	362.4	371.7	379.6
November	62.5	172.7	154.3	195.5	249.1	227.5	221.0	224.1	278.1	300.1	311.4	326.6	305.7	329.6
December	61.0	157.3	119.3	150.9	205.7	178.5	191.2	185.0	203.8	187.6	205.5	224.6	214.6	211.1

CLASS B CIGARS (UNIT: MILLIONS)

Months	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	324.8	293.6	221.4	147.3	96.1	138.5	106.2	89.0	70.0	54.1	38.1	42.1	31.0	14.5
February	351.2	247.2	202.5	162.5	112.4	117.4	104.2	83.3	65.2	55.1	46.8	41.3	27.5	27.3
March	381.4	219.0	240.5	168.0	126.0	125.0	112.3	88.2	72.5	63.3	52.7	48.1	31.3	32.1
April	366.3	196.6	215.4	159.1	119.6	122.6	107.3	89.4	80.3	54.5	41.6	49.0	31.2	28.7
May	356.0	212.2	222.0	151.0	135.3	140.3	114.3	88.4	81.7	63.8	53.4	51.8	37.8	13.7
June	342.5	221.4	224.1	169.7	145.6	142.0	114.4	100.6	87.8	65.8	59.3	49.8	38.2	11.5
July	383.4	227.3	213.6	153.8	136.5	143.7	126.8	103.0	85.0	64.1	59.1	55.3	37.3	7.2
August	388.6	291.3	210.4	170.6	143.4	143.4	123.8	100.4	86.7	69.6	61.0	50.4	35.7	7.2
September	354.1	201.3	206.2	168.8	140.7	140.1	123.6	102.8	81.6	70.6	56.4	50.4	35.2	6.8
October	363.8	236.3	203.6	167.2	157.2	162.0	128.5	114.4	92.7	76.0	71.0	59.9	34.3	7.6
November	305.2	217.0	192.5	158.2	155.0	140.2	112.0	98.0	85.7	69.2	56.5	46.0	28.2	6.2
December	284.8	216.1	148.3	106.6	125.8	98.7	89.4	67.4	56.2	41.0	43.5	30.5	20.2	6.5

[1]Production as indicated by Revenue Stamp Sales.

APPENDIX E (Continued)

MONTHLY PRODUCTION OF SMALL CIGARETTES AND LARGE CIGARS BY CLASSES, 1918–31

CLASS C CIGARS (UNIT: MILLIONS)

Months	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	103.6	155.1	261.0	176.8	176.3	201.8	186.3	176.5	172.7	160.8	137.0	134.8	118.0	90.6
February	113.8	151.0	238.6	187.2	169.1	189.8	180.8	162.9	177.4	155.2	155.4	144.3	124.1	96.5
March	128.6	162.6	327.3	217.1	192.4	222.5	190.3	185.4	221.8	192.1	170.0	158.0	129.8	109.2
April	131.6	162.9	289.4	219.2	180.1	204.0	186.5	189.6	190.1	177.4	167.0	187.5	148.0	124.2
May	133.0	179.6	296.4	239.0	209.0	218.8	213.0	199.4	191.6	200.3	207.1	191.3	166.1	128.6
June	139.8	177.2	312.0	247.2	223.0	225.1	212.6	221.4	224.6	217.1	209.1	186.6	168.0	136.1
July	157.0	166.6	302.0	223.1	201.4	222.6	220.4	212.1	212.1	205.8	196.6	194.2	153.1	112.0
August	172.0	132.5	307.6	236.7	223.0	229.8	203.3	215.6	225.8	228.7	207.2	196.5	145.2	111.6
September	152.4	132.5	307.3	231.0	220.0	223.0	222.5	223.2	232.1	239.8	216.1	198.0	151.1	105.4
October	164.3	228.0	326.1	248.4	258.0	275.1	245.2	271.0	270.4	275.7	276.0	258.1	199.4	136.1
November	166.5	251.1	295.7	245.1	257.0	261.5	248.3	252.8	267.0	260.5	239.3	227.8	175.4	130.1
December	175.4	272.4	217.7	191.6	215.0	199.4	212.0	204.5	189.5	151.2	149.6	144.3	105.7	81.2

CLASS D CIGARS (UNIT: THOUSANDS)

Months	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	751	2,069	8,410	9,718	8,078	7,928	8,135	9,472	7,825	7,413	6,159	7,528	7,052	4,535
February	951	1,460	9,423	13,097	7,344	7,723	8,607	9,009	9,546	8,700	9,501	9,031	7,130	6,199
March	1,180	1,888	12,067	17,527	8,406	9,025	9,671	11,465	10,896	11,301	11,069	11,084	10,231	6,877
April	1,260	1,876	7,946	14,403	8,179	9,214	10,518	10,651	11,502	11,308	10,108	11,381	10,226	8,462
May	1,066	1,495	6,583	13,450	9,190	10,219	10,580	10,643	11,758	12,184	11,293	13,834	11,250	9,514
June	1,231	1,839	7,504	13,227	9,213	10,158	10,763	11,697	12,554	12,819	12,717	12,446	10,671	8,105
July	1,257	2,047	8,271	9,136	8,358	10,540	10,817	10,802	12,422	11,257	10,911	13,164	10,676	6,877
August	1,193	1,010	11,293	11,155	9,668	9,360	10,103	13,293	13,023	12,920	12,916	12,684	9,083	5,938
September	1,427	1,010	13,059	11,101	10,608	9,742	11,693	13,126	13,735	15,604	12,417	12,371	9,261	7,569
October	1,911	7,083	16,728	11,888	13,196	14,489	10,869	17,051	17,835	19,226	18,988	16,460	14,674	8,913
November	1,828	6,961	18,147	12,398	12,704	14,765	14,968	17,351	18,548	17,544	16,477	15,816	13,623	9,065
December	2,655	10,268	16,653	10,725	10,677	10,952	13,992	11,998	11,094	10,055	10,585	9,352	7,133	4,046

APPENDIX E (Continued)

MONTHLY PRODUCTION OF SMALL CIGARETTES AND LARGE CIGARS BY CLASSES, 1918–31

CLASS E CIGARS (UNIT: THOUSANDS)

Months	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	1,090	2,894	2,305	1,826	1,512	1,919	1,829	2,255	1,151	1,342	811	1,011	676	503
February	1,278	1,836	4,356	2,972	2,131	2,045	1,519	2,131	1,583	1,164	1,179	1,154	865	586
March	1,419	1,948	5,880	2,922	3,306	2,432	1,632	2,139	1,397	1,852	1,953	1,456	1,127	790
April	1,601	2,708	3,972	2,442	3,252	2,165	1,987	2,970	1,777	2,137	1,290	1,398	1,070	869
May	1,576	1,381	3,272	2,232	2,617	2,624	2,069	2,209	1,295	2,268	1,960	1,810	1,531	902
June	1,473	1,880	4,583	2,102	2,702	2,767	1,953	2,691	1,640	2,309	2,167	1,679	1,342	996
July	1,472	2,607	3,042	1,753	1,939	2,463	2,603	2,664	2,053	1,997	1,953	2,026	1,438	986
August	1,628	3,376	4,612	2,095	2,561	2,603	2,153	2,734	2,261	1,835	1,990	1,583	1,329	701
September	1,908	3,376	6,316	2,411	2,535	2,870	2,560	3,810	3,488	2,623	1,976	1,583	1,312	729
October	2,832	4,186	6,007	3,104	3,943	4,257	4,742	6,384	4,888	5,780	4,935	4,661	3,621	1,965
November	1,706	7,507	7,307	3,968	5,388	6,564	5,169	6,222	5,489	6,627	6,808	6,745	5,113	2,419
December	3,652	5,922	4,040	3,677	3,831	3,644	4,632	4,307	3,896	3,158	2,606	1,975	1,824	1,553

CIGARETTES (UNIT: MILLIONS)

Months	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
January	2,447	3,079	4,529	3,902	3,706	5,350	6,257	6,652	6,944	7,269	8,369	10,160	10,210	9,370
February	2,717	3,126	3,536	4,119	3,126	4,623	4,855	5,681	6,240	6,609	7,532	8,062	8,470	8,840
March	3,253	3,845	4,374	4,470	3,636	5,043	5,269	6,270	7,633	8,026	8,470	8,690	9,170	9,800
April	3,394	2,650	3,775	3,802	3,453	4,711	5,323	6,048	6,973	7,880	7,511	9,608	9,540	9,470
May	3,361	2,768	3,953	4,136	4,601	5,555	6,392	6,465	7,258	8,539	8,892	11,170	10,300	10,450
June	3,273	3,140	4,083	4,220	5,302	5,836	6,455	7,434	8,486	8,736	9,691	10,840	11,750	11,510
July	3,797	3,585	3,053	4,167	5,247	3,840	6,583	7,612	7,961	8,277	9,724	10,720	11,860	10,700
August	3,442	3,918	3,569	5,137	6,374	5,858	6,316	6,983	8,068	9,328	10,627	10,930	10,580	9,520
September	3,403	4,283	3,558	4,797	5,554	5,567	6,273	7,119	8,086	8,994	9,126	10,350	10,190	9,700
October	3,027	5,029	3,840	4,882	4,498	6,277	6,488	6,925	8,061	8,552	9,922	11,200	10,950	8,960
November	2,987	4,769	3,529	4,235	4,524	5,361	5,356	6,517	7,345	8,093	8,536	9,041	7,950	7,850
December	2,788	4,579	2,817	3,000	3,545	4,228	5,442	6,245	6,392	6,870	7,515	8,261	8,670	7,300

APPENDIX F

SUMMARY OF CYCLICAL FLUCTUATIONS IN CIGARS AND CIGARETTES

1918 TO 1931

Cyclical Turning Points in the Series	Duration of Cyclical Movements		Amplitude of Cyclical Movements		
	Months	% of Duration of Full Cycle	Standing at Turning Points of Series	Rise (+) or Fall (−)	Rise (+) or Fall (−) per Month
Class A:					
L. Nov. '18.....			49		
H. Jan. '20.....	14	67	106	+ 57	+4.1
L. Aug. '20.....	7	33	87	− 19	−2.7
F. C.....	21			76	3.6
			69		
H. Dec. '22.....	28	80	126	+ 57	+2.0
L. Jul. '23.....	7	20	108	− 18	−2.6
F. C.....	35			75	2.1
			81		
H. Apr. '29.....	69	78	125	+ 44	+0.6
L. Dec. '30.....	20	22	114	− 11	−0.6
F. C.....	89			55	0.6
Averages:					
L.....			66		
H.....	37	75	119	+ 53	+2.2
L.....	11	25	103	− 16	−2.0
F. C.....	48			69	2.1
Class B:					
L. Aug. '19.....			99		
H. Jan. '20.....	5	17	147	+ 48	+9.6
L. Jan. '22.....	24	83	64	− 83	−3.5
F. C.....	29			131	4.5

APPENDIX F (Continued)

Cyclical Turning Points in the Series	Duration of Cyclical Movements		Amplitude of Cyclical Movements		
	Months	% of Duration of Full Cycle	Standing at Turning Points of Series	Rise (+) or Fall (−)	Rise (+) or Fall (−) per Month
			174		
H. Jan. '23	12	10	223	+ 49	+4.1
L. Nov. '31	106	90	7	−216	−2.0
F. C.	118			265	2.2
Averages:					
L.			137		
H.	8½	14	185	+ 49	+6.9
L.	65	86	36	−149	−2.8
F. C.	73½			198	3.4
Class C:					
L. Jan. '18			68		
H. Mar. '20	26	56	167	+ 99	+3.8
L. Oct. '21	19	44	92	− 75	−4.0
F. C.	45			174	3.9
			95		
H. Jan. '23	15	43	116	+ 21	+1.4
L. Sep. '24	20	57	98	− 18	−0.9
F. C.	35			39	1.1
			106		
H. Mar. '26	18	21	132	+ 26	+1.4
L. Dec. '31	69	79	51	− 81	−1.2
F. C.	87			107	1.2
Averages:					
L.			90		
H.	20	40	138	+ 49	+2.2
L.	36	60	80	− 58	−2.0
F. C.	56			107	2.1
Class D:					
L. Jan. '18			17		
H. Mar. '21	38	84	272	+255	+6.7
L. Oct. '21	7	16	120	−152	−21.7
F. C.	45			407	9.0

APPENDIX F (Continued)

Cyclical Turning Points in the Series	Duration of Cyclical Movements		Amplitude of Cyclical Movements		
	Months	% of Duration of Full Cycle	Standing at Turning Points of Series	Rise (+) or Fall (−)	Rise (+) or Fall (−) per Month
			80		
H. Jul. '26	57	76	122	+ 42	+0.7
L. Jan. '28	18	24	78	− 44	−2.4
F. C.	75			86	1.1
			119		
H. Jul. '29	18	38	141	+ 22	+1.2
L. Dec. '31	29	62	38	−103	−3.6
F. C.	47			125	2.7
Averages:					
L.			72		
H.	38	66	178	+106	+2.9
L.	18	34	79	−100	−9.2
F. C.	56			206	4.3
Class E:					
L. Nov. '18			69		
H. Mar. '20	16	46	221	+152	+9.5
L. Oct. '21	19	54	49	−172	−9.1
F. C.	35			324	9.3
			62		
H. Jan. '23	15	52	123	+ 61	+4.1
L. Mar. '24	14	48	76	− 47	−3.4
F. C.	29			108	3.7
			89		
H. Jan. '25	10	39	149	+ 60	+6.0
L. May '26	16	61	55	− 94	−5.9
F. C.	26			154	5.9
			96		
H. Oct. '27	17	27	165	+ 69	+4.1
L. Sep. '31	47	73	36	−129	−2.7
F. C.	64			198	3.1

APPENDIX F (Continued)

Cyclical Turning Points in the Series	Duration of Cyclical Movements		Amplitude of Cyclical Movements		
	Months	% of Duration of Full Cycle	Standing at Turning Points of Series	Rise (+) or Fall (−)	Rise (+) or Fall (−) per Month
Averages:					
L.			79		
H.	15	41	165	+ 86	+5.9
L.	24	59	54	−110	−5.3
F. C.	39			196	5.5
Cigarettes:					
L. Jan. '18			87		
H. Dec. '19	23	77	123	+ 36	+1.6
L. Jul. '20	7	23	78	− 45	−6.4
F. C.	30			81	2.7
			46		
H. May '29	106	78	136	+ 90	+0.8
L. Nov. '31	30	22	117	− 19	−0.6
F. C.	136			109	0.8
Averages:					
L.			67		
H.	65	78	130	+ 63	+1.2
L.	18	22	98	− 32	−3.5
F. C.	83			95	1.8

APPENDIX

FLUCTUATIONS OF CIGAR AND CIGARETTE CYC

1918–

Reference Dates for Successive Cycles	CLASS A CIGARS				CLASS B CIGARS				CLASS C	
	Intervals in Months	Average Standing	Change (plus or minus)	Average Change per Mo. (+ or −)	Intervals in Months	Average Standing	Change (plus or minus)	Average Change per Mo. (+ or −)	Intervals in Months	Average Standing
May 1919	2.0	100.1			2.0	107.6			2.0	72.2
Je. '19–Jl. '19	1.5	101.5	1.4	0.9	1.5	105.8	− 1.8	− 1.2	1.5	68.9
Ag. '19–O. '19	2.5	108.2	6.7	2.7	2.5	95.8	−10.0	− 4.0	2.5	59.1
N. '19–Ja. '20	3.0	114.4	6.2	2.7	3.0	126.7	30.9	10.3	3.0	114.9
F. 1920	2.0	109.2	− 5.2	−2.6	2.0	130.9	4.2	2.1	2.0	135.0
Mr. '20–Ag. '20	3.5	91.8	−17.4	−5.0	3.5	110.7	−20.2	− 5.8	3.5	127.5
S. '20–F. '21	6.0	89.0	− 2.8	−0.5	6.0	93.4	−17.3	− 2.9	6.0	102.6
Mr. '21–S. '21	6.5	105.6	16.6	2.6	6.5	80.8	−12.6	− 1.9	6.5	94.4
		111.5				74.9				85.2
O. 1921	4.0	84.3	5.9	1.5	4.0	111.6	− 5.9	− 1.5	4.0	95.5
N. '21–Ap. '22	3.5	89.4	5.1	1.5	3.5	100.8	−10.8	− 3.1	3.5	97.1
My. '22–O. '22	6.0	105.6	16.2	2.7	6.0	99.3	− 1.5	− 0.3	6.0	95.7
N. '22–My. '23	6.5	106.2	0.6	0.1	6.5	110.4	11.1	1.7	6.5	107.5
Je. 1923	4.0	94.9	−11.3	−2.8	4.0	102.2	− 8.2	− 2.1	4.0	100.4
Jl. '23–O. '23	2.5	96.8	1.9	0.8	2.5	99.5	− 2.7	− 1.1	2.5	100.2
N. '23–F. '24	4.0	106.0	9.2	2.3	4.0	96.6	− 2.9	− 0.7	4.0	104.2
Mr. '24–Jl. '24	4.5	99.9	− 6.1	−1.4	4.5	86.9	− 9.7	− 2.2	4.5	96.6
		102.3				86.1				95.8
Ag. 1924	3.0	91.3	2.4	0.8	3.0	137.8	− 0.8	− 0.3	3.0	98.8
S. '24–Ap. '25	4.5	92.2	0.9	0.2	4.5	127.1	−10.7	− 2.4	4.5	100.3
My. '25–Ja. '26	8.5	92.6	0.4	0.1	8.5	110.4	−16.7	− 2.0	8.5	100.6
F. '26–O. '26	9.0	100.3	7.7	0.9	9.0	96.3	−14.1	− 1.6	9.0	102.5
N. 1926	5.0	104.2	3.9	0.8	5.0	91.8	− 4.5	− 0.9	5.0	102.9
D. '26–Mr. '27	2.5	110.2	6.0	2.4	2.5	82.1	− 9.7	− 3.9	2.5	97.3
Ap. '27–Jl. '27	4.0	109.0	− 1.2	−0.3	4.0	73.5	− 8.6	− 2.2	4.0	95.8
Ag. '27–D. '27	4.5	110.5	1.5	0.3	4.5	74.3	0.8	0.2	4.5	99.8
		108.7				62.6				85.1
Ja. 1928	3.0	88.5	− 1.8	−0.6	3.0	138.6	−11.7	− 3.9	3.0	111.3
F. '28–Je. '28	3.0	92.1	3.6	1.2	3.0	143.0	4.4	1.5	3.0	121.0
Jl. '28–D. '28	5.5	95.0	2.9	0.5	5.5	146.5	3.5	0.6	5.5	122.7
Ja. '29–Je. '29	6.0	100.6	5.6	0.9	6.0	136.2	−10.3	− 1.7	6.0	113.9
Jl. 1929	3.5	102.2	1.6	0.5	3.5	127.6	− 8.6	− 2.5	3.5	115.8
Ag. '29–My. '30	5.5	102.3	0.1	0.0	5.5	107.3	−20.3	− 3.7	5.5	106.0
Je. '30–Mar. '31	10.0	99.1	− 3.2	−0.3	10.0	80.3	−27.0	− 2.7	10.0	85.4
Ap. '31–D. '31	9.5	106.2	7.1	0.8	9.5	28.4	−51.9	− 5.5	9.5	70.5
Average:										
Revival	3.0	90.3			3.0	121.9			3.0	95.3
Expansion	3.1	93.0			3.1	117.3			3.1	97.6
Expansion	5.6	99.6			5.6	111.2			5.6	95.3
Expansion	6.1	104.5			6.1	115.5			6.1	110.5
Recession	3.6	101.8			3.6	111.3			3.6	114.4
Contraction	3.5	99.5			3.5	98.3			3.5	108.7
Contraction	6.0	100.0			6.0	84.6			6.0	97.8
Contraction	6.3	104.7			6.3	66.6			6.3	91.0
Revival	3.8	106.6			3.8	73.3			3.8	89.4

G

PRODUCTION DURING SUCCESSIVE BUSINESS LES

1931

CIGARS		CLASS D CIGARS				CLASS E CIGARS				CIGARETTES			
Change (plus or minus)	Average Change per Mo. (+ or −)	Intervals in Months	Average Standing	Change (plus or minus)	Average Change per Mo. (+ or −)	Intervals in Months	Average Standing	Change (plus or minus)	Average Change per Mo. (+ or −)	Intervals in Months	Average Standing	Change (plus or minus)	Average Change per Mo. (+ or −)
		2.0	17.9			2.0	55.1						
− 3.3	− 2.2	1.5	20.5	2.6	1.7	1.5	71.7	16.6	11.1	2.0	70.5		
− 9.8	− 3.9	2.5	23.8	3.3	1.3	2.5	84.6	12.9	5.2	1.5	77.4	6.9	4.6
55.8	18.6	3.0	95.5	71.7	33.9	3.0	105.4	20.8	6.9	2.5	107.6	30.2	12.1
20.1	10.0	2.0	125.8	30.3	15.1	2.0	174.5	69.1	34.6	3.0	126.7	19.1	6.4
− 7.5	− 2.1	3.5	81.6	−44.2	−12.7	3.5	138.6	−35.9	−10.3	2.0	109.0	−17.7	− 8.9
−24.9	− 4.2	6.0	141.5	59.9	9.9	6.0	107.2	−31.4	− 5.2	3.5	93.0	−16.0	− 4.6
− 8.2	− 1.3	6.5	134.6	− 6.9	− 1.0	6.5	72.5	−34.7	− 5.3	6.0	95.9	2.9	0.5
			94.0				52.8			6.5	106.9	11.0	1.7
− 9.2	− 2.3	4.0	92.2	−40.6	−10.2	4.0	69.4	−19.7	− 4.9		115.7		
1.6	0.5	3.5	95.7	3.5	1.0	3.5	113.1	43.7	12.5	4.0	91.0	8.8	2.2
− 1.4	− 0.2	6.0	93.8	− 1.9	− 0.3	6.0	94.7	−18.4	− 3.1	3.5	75.4	−15.6	− 4.5
11.8	1.8	6.5	100.0	6.2	0.9	6.5	106.7	12.0	1.8	6.0	97.8	22.4	3.7
− 7.1	− 1.8	4.0	105.5	5.5	1.4	4.0	108.4	1.7	0.4	6.5	100.0	2.2	0.3
− 0.2	− 0.1	2.5	100.5	− 5.0	− 2.0	2.5	97.0	−11.4	− 4.6	4.0	106.2	6.2	1.6
4.0	1.0	4.0	108.1	7.6	1.9	4.0	100.4	3.4	0.9	2.5	109.5	3.3	1.3
− 7.6	− 1.7	4.5	109.0	0.1	0.0	4.5	88.1	−12.3	− 2.7	4.0	112.0	2.5	0.6
			109.3				93.3			4.5	115.8	3.8	0.8
− 0.8	− 0.3	3.0	91.6	0.3	0.1	3.0	97.3	5.2	1.7		118.5		
1.5	0.3	4.5	95.3	3.7	0.8	4.5	115.2	17.9	4.0	3.0	82.2	2.7	0.9
0.3	0.0	8.5	98.9	3.6	0.4	8.5	111.1	− 4.1	− 0.5	4.5	86.8	4.6	1.0
1.9	0.2	9.0	104.5	5.6	0.6	9.0	87.0	−24.1	− 2.7	8.5	93.6	6.8	0.8
0.4	0.1	5.0	101.6	− 2.9	− 0.6	5.0	97.2	10.2	2.0	9.0	103.0	9.4	1.0
− 5.6	− 2.2	2.5	92.6	− 9.0	− 3.6	2.5	88.4	− 8.8	− 3.5	5.0	106.4	3.4	0.7
− 1.5	− 0.4	4.0	102.5	9.9	2.5	4.0	95.6	7.2	1.8	2.5	105.4	− 1.0	− 0.4
4.0	0.9	4.5	105.8	3.3	0.7	4.5	96.0	0.4	0.1	4.0	111.2	5.8	1.5
			84.3				68.9			4.5	116.4	5.2	1.2
−14.7	− 4.9	3.0	99.5	−21.5	− 7.2	3.0	109.6	−27.1	− 9.0		115.7		
9.7	3.2	3.0	115.7	16.2	5.4	3.0	129.6	20.0	6.7	3.0	87.9	− 0.7	− 0.2
1.7	0.3	5.5	117.8	2.1	0.4	5.5	137.4	7.8	1.4	3.0	89.5	1.6	0.5
− 8.8	− 1.5	6.0	119.1	1.3	0.2	6.0	113.5	−23.9	− 4.0	5.5	96.1	6.6	1.2
1.9	0.5	3.5	128.8	9.7	2.8	3.5	114.1	0.6	0.2	6.0	103.1	7.0	1.2
− 9.8	− 1.8	5.5	107.1	−21.7	− 4.0	5.5	102.5	−11.6	− 2.1	3.5	103.6	0.5	0.1
−20.6	− 2.1	10.0	87.3	−19.8	− 2.0	10.0	85.4	−17.1	− 1.7	5.5	104.3	0.7	0.1
−14.9	− 1.6	9.5	69.8	−17.5	− 1.8	9.5	60.1	−25.3	− 2.7	10.0	104.3	0.0	0.0
										9.5	98.1	− 6.2	− 0.7
		3.0	78.2			3.0	84.9						
		3.1	84.9			3.1	110.0			3.0	81.7		
		5.6	86.8			5.6	109.6			3.1	81.1		
		6.1	108.8			6.1	105.7			5.6	97.4		
		3.6	119.8			3.6	126.6			6.1	106.6		
		3.5	99.1			3.5	109.2			3.6	104.7		
		6.0	114.0			6.0	99.5			3.5	101.6		
		6.3	108.8			6.3	81.1			6.0	104.3		
		3.8	99.6			3.8	73.4			6.3	107.7		
										3.8	114.9		

APPENDIX

FLUCTUATIONS OF CIGAR AND CIGARETTE CYC

1918–

CLASS A CIGARS			CLASS B CIGARS			CLASS C CIGARS		
Dates for Successive Specific Cycles	Intervals in Months	Average Standing	Dates for Successive Specific Cycles	Intervals in Months	Average Standing	Dates for Successive Specific Cycles	Intervals in Months	Average Standing
Dec. 1918		45.9	Sept. 1919		100.5	Feb. 1918		64.6
Ja. '19–Ap. '19	2.5	79.9	O. '19	1.0	105.7	Mr. '18–O. '18	4.5	67.0
My. '19–Ag. '19	4.0	109.5	N. '19–D. '19	1.5	126.0	N. '18–Jl. '19	8.5	82.7
S. '19–Ja. '20	4.5	118.9	Ja. 1920	1.5	146.8	Ag. '19–Mr. '20	8.5	113.0
F. 1920	3.0	116.2	F. 1920	1.0	137.4	Ap. 1920	4.5	151.2
Mr. '20–Ap. '20	1.5	107.7	Mr. '20–S. '20	4.0	114.1	My. '20–O. '20	3.5	135.2
My. '20–Je. '20	2.0	99.9	O. '20–My. '21	7.5	94.4	N. '20–Ap. '21	6.0	111.4
Jl. '20–Ag. '20	2.0	88.2	Je. '21–Ja. '22	8.0	76.6	My. '21–O. '21	6.0	103.3
		86.5			68.9			96.1
S. 1920	1.5	68.6	F. 1922	4.5	167.1	N. 1921	3.5	94.8
O. '20–Je. '21	5.0	80.7	Mr. '22–Je. '22	2.5	173.3	D. '21–Ap. '22	3.0	97.7
Jl. '21–Mr. '22	9.0	95.3	Jl. '22–O. '22	4.0	166.7	My. '22–S. '22	5.0	96.1
Ap. '22–D. '22	9.0	118.5	N. '22–Ja. '23	3.5	204.2	O. '22–Ja. '23	4.5	105.1
Ja. 1923	5.0	124.9	F. 1923	2.0	191.9	F. 1923	2.5	113.2
F. '23–Mr. '23	1.5	114.5	Mr. '23–Ja. '26	18.0	144.9	Mr. '23–Ag. '23	3.5	103.0
Ap. '23–My. '23	2.0	108.9	F. '26–D. '28	35.0	83.3	S. '23–Mr. '24	6.5	101.6
Je. '23–Jl. '23	2.0	104.2	Ja. '29–N. '31	35.0	42.2	Ap. '24–S. '24	6.5	93.4
		106.0						94.4
Ag. 1923	1.5	79.1				O. 1924	3.5	111.6
S. '23–Jl. '25	12.0	94.4				N. '24–Ap. '25	3.5	116.8
Ag. '25–Je. '27	23.0	94.4				My. '25–O. '25	6.0	113.8
Jl. '27–Ap. '29	22.5	107.1				N. '25–Mr. '26	5.5	122.6
My. 1929	11.5	121.5				Ap. 1926	3.0	116.7
Je. '29–N. '29	3.5	117.8				My. '26–F. '28	11.5	112.5
D. '29–My. '30	6.0	116.3				Mr. '28–Ja. '30	22.5	102.7
Je. '30–D. '30	6.5	114.4				F. '30–D. '31	23.0	71.7
Average:								
Revival	1.5	64.3		4.5	108.8		3.5	87.5
Expansion	6.5	81.8		1.8	113.5		3.7	90.9
Expansion	12.0	99.5		2.8	119.1		6.5	94.5
Expansion	12.0	114.5		2.5	142.7		6.2	110.0
Recession	6.5	120.6		1.5	134.0		3.3	123.0
Contraction	2.5	113.0		11.0	105.3		6.2	113.2
Contraction	3.3	108.1		21.3	72.3		11.7	101.9
Contraction	3.5	102.1		21.5	48.3		11.8	86.7
Revival	2.3	96.1		11.3	56.0		6.3	92.3

H

PRODUCTION DURING SUCCESSIVE SPECIFIC LES

1931

CLASS D CIGARS			CLASS E CIGARS			CIGARETTES		
Dates for Successive Specific Cycles	Intervals in Months	Average Standing	Dates for Successive Specific Cycles	Intervals in Months	Average Standing	Dates for Successive Specific Cycles	Intervals in Months	Average Standing
Feb. 1918.....		16.8	Dec. 1918.....		80.0	Feb. 1918.....		81.5
Mr. '18–F. '19.....	6.5	22.2	Ja. '19–My. '19..	3.0	82.5	Mr. '18–S. '18....	4.0	91.4
Mr. '19–Mr. '20...	12.5	76.5	Je. '19–O. '19....	5.0	81.7	O. '18–My. '19...	7.5	88.2
Ap. '20–Mr. '21...	12.5	171.8	N. '19–Mr. '20...	5.0	148.9	Je. '19–D. '19....	7.5	115.7
Ap. 1921.....	6.5	227.3	Ap. 1920.....	3.0	155.6	Ja. 1920.....	4.0	129.7
My. '21–Je. '21....	1.5	188.3	My. '20–O. '20...	3.5	126.6	F. '20–Mr. '20...	1.5	117.7
Jl. '21–Ag. '21.....	2.0	150.4	N. '20–Ap. '21...	6.0	98.6	Ap. '20–My. '20..	2.0	109.6
S. '21–O. '21.....	2.0	134.0	My. '21–O. '21...	6.0	62.6	Je. '20–Jl. '20....	2.0	89.9
		129.9			56.0			87.9
N. 1921.....	1.5	82.8	N. 1921.....	3.5	69.7	Ag. 1920.....	1.5	44.3
D. '21–Je. '23.....	10.0	88.0	D. '21–Ap. '22...	3.0	120.0	S. '20–Jl. '23.....	18.0	61.9
Jl. '23–Ja. '25.....	19.0	97.2	My. '22–S. '22...	5.0	95.3	Ag. '23–Je. '26...	35.0	88.9
F. '25–Jl. '26.....	18.5	108.2	O. '22–Ja. '23....	4.5	93.6	Jl. '26–My. '29...	35.0	119.0
Ag. 1926.....	9.5	118.9	F. 1923.....	2.5	117.7	Je. 1929.....	18.0	142.0
S. '26–F. '27.....	3.5	106.7	Mr. '23–Je. '23...	2.5	106.4	Jl. '29–Ap. '30...	5.5	138.8
Mr. '27–Ag. '27...	6.0	111.9	Jl. '23–N. '23....	4.5	96.0	My. '30–F. '31...	10.0	139.3
S. '27–Ja. '28.....	5.5	106.6	D. '23–Mr. '24...	4.5	91.5	Mr. '31–N. '31...	9.5	132.5
		99.0			82.4			
F. 1928.....	3.0	107.7	Ap. 1924.....	2.5	85.1			
Mr. '28–Ag. '28...	3.5	117.0	My. '24–Jl. '24...	2.0	91.9			
S. '28–F. '29.....	6.0	113.1	Ag. '24–O. '24....	3.0	90.0			
Mr. '29–Jl. '29....	5.5	127.2	N. '24–Ja. '25....	3.0	115.2			
Ag. 1929.....	3.0	126.7	Feb. 1925.....	2.0	125.9			
S. '29–My. '30....	5.0	104.7	Mr. '25–Jl. '25...	3.0	110.1			
Je. '30–Mr. '31....	9.5	87.0	Ag. '25–D. '25...	5.0	114.8			
Ag. '31–D. '31.....	9.5	69.6	Ja. '26–My. '26..	5.0	74.1			
					69.5			
			Je. 1926.....	3.0	97.8			
			Jl. '26–N. '26....	3.0	136.5			
			D. '26–My. '27...	5.5	125.7			
			Je. '27–O. '27....	5.5	129.7			
			N. 1927.....	3.0	141.5			
			D. '27–F. '29....	8.0	109.4			
			Mr. '29–Je. '30...	15.5	92.0			
			Jl. '30–S. '31.....	15.5	63.7			
	2.3	62.1		3.0	83.0		1.5	60.6
	6.7	68.1		2.8	107.5		11.0	74.0
	12.8	85.9		4.6	98.0		21.3	85.4
	12.2	122.0		4.5	121.6		21.3	113.2
	6.3	141.7		2.6	134.9		11.0	131.0
	3.3	119.7		4.3	112.9		3.5	123.7
	5.8	104.6		7.8	100.2		6.0	120.1
	5.7	93.0		7.8	72.8		5.8	107.2
	3.2	102.9		4.3	69.1		3.3	84.8

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